

California State University, San Bernardino

CSUSB ScholarWorks

Theses Digitization Project

John M. Pfau Library

1995

Implementing total quality management in the public sector

Cynthia J. Lewis

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/etd-project>



Part of the [Public Administration Commons](#)

Recommended Citation

Lewis, Cynthia J., "Implementing total quality management in the public sector" (1995). *Theses Digitization Project*. 1106.

<https://scholarworks.lib.csusb.edu/etd-project/1106>

This Project is brought to you for free and open access by the John M. Pfau Library at CSUSB ScholarWorks. It has been accepted for inclusion in Theses Digitization Project by an authorized administrator of CSUSB ScholarWorks. For more information, please contact scholarworks@csusb.edu.

**IMPLEMENTING TOTAL QUALITY MANAGEMENT
IN THE PUBLIC SECTOR**

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Public Administration

by
Cynthia J. Lewis
March 1995

**IMPLEMENTING TOTAL QUALITY MANAGEMENT
IN THE PUBLIC SECTOR**

A Project
Presented to the
Faculty of
California State University,
San Bernardino

by
Cynthia J. Lewis
March 1995
Approved by:


Chuck Christie, Ph.D.
First Reader

3/22/95
Date


David J. Bellis, Ph.D.
Second Reader


Clifford O. Young, DPA
Chairman, Department of Public Administration

Copyright © 1995 by Cynthia J. Lewis. All rights reserved. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be produced or distributed in any form or by any means, or stored in a database or retrieval system, without written permission of the author.

Abstract

Currently, little has been developed in the area of implementing a systematic approach to total quality management (TQM) in the public sector. This project develops a systematic model program and methodology for implementing TQM in the public sector. The research methods utilized in this project are based on literature search, interviews, original concept development and the author's practical experience.

TQM is not without obstacles. Political factions, financial limitations and old paradigms must be overcome before TQM can be implemented. In TQM all participants, internal customers and external customers are members of the TQM team in varying degrees. As the TQM program matures, teams coalesce and teamwork results.

This project also provides suggested time frames for implementation of a systematic TQM program, a glossary of TQM terms and a suggested reading list to further the quest for TQM in the public sector.

TABLE OF CONTENTS

ABSTRACT	iii
Chapter 1 -- Total Quality Management in the Public Sector	1
Preface	2
Problem Statement	3
Federal Level TQM Programs	5
State Level TQM Involvement	7
Municipal TQM Efforts	10
Local Area Survey	16
Chapter 2 -- Obstacles to TQM Programs	19
Obstacles	20
Chapter 3 -- The Dynamics of Change	28
Understanding Change	29
Overcoming Resistance to Change	31
Advisory Councils	35
Chapter 4 -- Implementation of TQM	37
Implementation - The Beginning	38
Selection of the best Method(s) of Training Techniques	42
Facilitators	43
Total Quality Management Implementation Model	44
The Selling Phase	48
The Training Phase	52

Teams.....	53
Special Teams	53
Continuous Improvement Cycle.....	54
Chapter 5 -- Summary and Conclusion.....	58
Summary	59
Conclusion	60
Appendix 1 -- California's Request for Volunteers.....	62
State of California Letter To: Quality Professionals Interested in Improving California Government	63
Request for Volunteers.....	64
Request for Volunteers (RFV) Proposal Application.....	67
Appendix 2 -- Survey of the Inland Empire	70
TQM Telephone Survey	71
Results.....	72
Roster of Indand Empire Cities	73
Appendix 3 -- Glossary of Terms.....	74
Total Quality Management Terms.....	75
Appendix 4 -- TQM Courses	89
Course Descriptions	90
Train the Trainer	90
Team Member Course.....	91
Process Identification Course	91
Customer Identification Course.....	92

Works Cited .	93
Bibliography .	96
Suggested Readings.....	99
Total Quality/Continuous Improvement	99
Change	101
Customer Satisfaction	102
Leadership.....	103
Team Building, Problem-Solving, and Communications	104

List of Figures

Figure	Page
1. C. J. Lewis, Organizational Change Process, 1995	30
2. C. J. Lewis, Resistance Indicator, 1995	32
3. C. J. Lewis, Resistance Indicator (Example)	33
4. Carr & Littman, Continuous Improvement Diagram, 1990	39
5. C. J. Lewis, TQM Implementation Model (Macro View), 1995.....	45
5a. C. J. Lewis, The Decision Phase, 1995	46
5b. C. J. Lewis, The Selling Phase, 1995.....	47
5c. C. J. Lewis, The Training Phase, 1995.....	51
5d. C. J. Lewis, Implementation Phase, 1995.....	54
5e. C. J. Lewis, The Culture Question, 1995.....	56

Chapter 1

Total Quality Management in the Public Sector

Preface

The author defines total quality management (TQM) as a management program philosophy and approach to long-term success through organization-wide efforts of continuous improvements. The TQM philosophical concept is based on leadership style, work environment, and the pursuit of continuous improvement processes. Adopting TQM as a program often requires major paradigm shifts from the methods public sector organizations have conducted in the past. Organizations must work to improve processes, reduce costs and become more efficient, to fulfill citizen-customer expectations.

As revenues shrink, citizens demand accountability from public sector organizations. James J. Kline, a management consultant, stated that the relationship of "fiscal stress and voter resistance to taxes is well documented." He goes on to point out that, as the private sector improves product and service quality, the citizenry is demanding that the public sector make improvements in their services and processes as well. (1) One approach to meeting this demand for improving governmental performance in services, cost effectiveness and general overall efficiency is by implementing total quality management (TQM).

TQM has been credited with improving services, efficiency and cost effectiveness in both the private and public sectors. In many instances, multiple layers of government and crippling restrictive regulations are being dissolved through TQM efforts designed to streamline government and reduce costs. The Government Accounting Office's report entitled "Quality Management - Survey of Federal Organizations" examined the benefits of TQM at the federal level and

validated cost reductions, improved services and improved organizational efficiencies in the organizations that participated in the survey. (2)

The foundation of the total quality movement is rooted in the industrial engineering disciplines. The origins can be found with Frederick Taylor's time-and-motion studies (1897); Dr. Walter Shewhart's development of a system for measuring variances in production systems, now known as statistical process control (SPC) (circa 1920), and his Plan-Do-Check-Act (PDCA) cycle for continuous quality improvement; Dr. W. Edward Deming's "fourteen points" (principles of management philosophy) (circa 1952-1955). The total quality movement reached its present-day application form with Joseph M. Juran's customer concept that defined internal and external customers and the roles that each play (circa 1960). It is from this forum that the total quality movement began. (3)

The following pages will discuss TQM applications in the public sector, obstacles to implementing TQM, overcoming resistance to change, and provides an implementation method for TQM in the public sector.

Problem Statement

The federal government has had examples of success with implementing TQM, such as decreased acquisition costs for Department of Defense weapons systems. Little is apparently being done on a wide-scale basis in implementation of TQM in the state and municipal public sectors. There are some public organizations which have developed and implemented TQM programs and have been highly successful. Those organizations' success stories are beginning to be used as benchmarks for other public sector organizations to emulate.

The overall purpose of this study is to develop a model program and methodology for implementing TQM in the public sector that may be applied to any level of a government organization. This author's experience shows that many consultants or high-priced management advisory firms offer a range of "band-aid fixes" which seldom examine implementation of a TQM program in the public sector from a system-wide stance.

This research project will also delineate the obstacles that need to be overcome, such as bureaucratic and political resistance to change, changing or expanding paradigms, garnering program support, and funding of resources, to name a few. The author had the opportunity to be a participant observer with the Corona, California Mayor's Task Force for Reinventing Government Group (CRGG) while the group analyzed Corona city management problems, developed courses of actions and tried to implement changes.

As a Quality Advisor within the United States Air Force for five years, the author has developed several successful TQM programs within the federal government. The programs have ranged in size from small sub-units of twenty employees to the program development and training of larger organizations of more than two hundred employees. Due to the classified nature of the projects that the TQM implementation programs supported, further disclosure of specific documents and materials is not possible. However, it is from this experience level that the author has selected this topic for further exploration. The only factor considered for the illustrated TQM program implementation model is the size of the group being trained. The relationship of training course time required to complete organizational training is based on a hypothetical group of 125 employees for the purpose of determining the time frames within the training program that is discussed later in this project.

Methodologies used in the development of this project include: literature search, a survey of the Inland Empire, a case study of Corona, California, and the author's five years' experience as a TQM advisor and facilitator with the federal government.

Federal Level TQM Programs

The federal government officially began its pursuit of quality on April 27, 1988, as the result of Executive Order 12637. Entitled "Productivity Improvement Program for the Federal Government," this executive order, encompassed all executive departments and agencies, established a program to improve the efficiency, timeliness and quality of public services; and set as a goal an annual average productivity increase of three percent by 1991, by agencies that could produce measurable outputs as services to the public. However between 1990-1992, the Bush administration placed little emphasis on productivity and quality improvement. Executive Order 12637 was revoked in 1992. The federal government developed the Federal Quality Institute was part of the original quality effort. (4) The FQI survives today to serve as the government-wide focal point for information about quality management. In addition, most federal agencies and departments have developed internal institutes for furthering continuous quality improvement programs that develop quality training programs for use throughout each organization.

The federal quality program is once again receiving emphasis. A new federal quality initiative has been directed and implemented as a method to reduce the costs of operating the federal government.

Under the Clinton administration, Vice President Al Gore led the National Performance Review (NPR). The NPR is another name for TQM. The NPR was developed by a team of 200 federal employees over a six-month period to study wasteful practices, duplications and needless regulations. The NPR also identified successes such as decreasing acquisition costs by the use of innovative approaches to program management. (5)

One such initiative was to accept general manufacturing practices (GMP) where practicable and delete military specifications, which in many instances were not as stringent but drove costs higher as manufacturers met military or federal specification compliance requirements. This shift to accepting GMP also opened the door the acceptance of commercial-off-the-shelf (COTS) items. COTS are items, parts and complete systems that are readily available and require no additional specification requirements to be met.

Today's military acquisitions are required by directives to utilize COTS wherever possible and practical. This move has driven acquisition costs down by using readily available technology; improved delivery time by incorporation of COTS; and reduced contracting, personnel and documentation duplications.

All federal departments are involved in the implementation and application of TQM. To further encourage TQM within the federal government, a recognition program was created. The federal government has developed an awards program to recognize TQM excellence in government improvement. The program is administered by the FQI. In 1988, as part of FQI's TQM program, the following two awards were created. (6)

The first, the Presidential Award for Quality, was designed for organizations that have an on-going quality program (at least 3-6 years). It is based on an adaptation of the Malcolm Baldrige National Quality Award criteria that recognize

quality achievement by public organizations that was adapted to reflect the culture of the federal government. The Malcolm Baldrige National Quality Award, on the other hand, reflects the corporate environment and culture. The Presidential Award for Quality is designed to evaluate federal organizations with at least 500 employees against the same types of criteria of excellence that are used by the private sector. This award may be given to a maximum of two organizations annually.

The second award, the Quality Improvement Prototype (QIP) was created to recognize organizations that have recently begun successful TQM efforts. The QIP is similar to the Presidential Award for Quality, but does not include in its criteria some of the more advanced TQM concepts. Organizations of at least 100 employees may compete for this award. The QIP may be awarded to no more than six organizations each year.

State Level TQM Involvement

According to Mr. John Politi, Executive Director, State Quality Award Network (part of the Excellence in Missouri Foundation) forty-three states have developed quality offices or have adopted quality initiatives. However, this does not imply that TQM has been fully integrated into state-level organizational cultures. It does mean that most states recognize the need for improved processes and services. Some states have mandated programs, while other states have voluntary participation.

Politi also stated that over one half of all state level programs are aimed at fostering quality within the private sector, not state government. TQM recognition awards are created and designated for private sector programs. Public sector

organizations are beginning to develop TQM programs in some states, however, there are few formal state level TQM programs for public sector programs. (7)

Several states experienced difficulty in implementing TQM statewide. The major obstacle that arises from adopting any new technology, voluntarily or mandatorily, is that the technology is often viewed by employees at all levels as "the program-of-the-month," frequently overlooking the gains in personnel available and economic savings. Additionally, organizations are often put into a position of being forced to adapt to a program that may not be appropriate to their organizational environment or culture.

Although the rapid adoption seems almost faddish, it is, in fact, a practical response to the number of forces that are pushing the public and private sectors to change their management philosophy and approach. And the economic gains that result from TQM programs further spur their adoption. (8)

California's informal TQM program can be traced from an initial foray into quality improvement in the 1980s. The Department of Motor Vehicles (DMV) began to look at the growing number of customer complaints about long lines for motor vehicle transactions. Many customers were refusing to go to the DMV to conduct their business, choosing to forego proper documentation rather than endure DMV's highly bureaucratic processes. The DMV studied the problem, identified processes that could be improved, and began to develop alternatives to the established procedure of waiting in a DMV office line for an extended period of time before the transaction could be processed. The process change introduced the mail-out and return-mail system for motor vehicle registration renewals. Although the effort was not identified as a TQM initiative at the time, it was an excellent example of using TQM tools to maximize efficiency, and eliminate non-value added steps in a

process while meeting customers' needs. Another positive innovation was the DMV appointment system. DMV's successes were California's first total quality experience. (9)

Other State organizations tried at times to incorporate TQM into their functions, often without much visible success. TQM in California went dormant until a restart in 1991. Again, DMV led the way by studying cycle times of various activities and reducing several service activities' cycle times from seven days to one hour. (10)

California Governor Pete Wilson signed Executive Order W-47-93 on June 10, 1993, which established a voluntary Quality Improvement Task Force to develop quality improvement programs for State agencies. The Executive Order identifies what the advantages of quality will do for California:

Whereas, quality is a proven approach to management that demonstrably improves performance; and

Whereas, quality relies on effective leadership, strategic planning, enlightened human resource management, good supplier relations, customer satisfaction, assessment of results and continuous improvement; and

Whereas, quality can help the Governor's commitment to spending tax dollars wisely; and . . .

Whereas, quality has been successfully implemented at the federal and local government levels. . . . (11)

Governor Wilson clearly defined the need for quality and identified where quality programs have succeeded. In issuing Executive Order W-47-93, he set the course for California. With the framework in place for the State's informal TQM program, its only drawback was that no funds were allocated to support this initiative. Governor Wilson did establish an appointed position for Quality Coordinator, currently held by Ms. Caren Rubin.

With no funds available to develop California's quality program, Rubin developed a request for volunteers that was sent State-wide to quality professionals. She developed an innovative program that yielded TQM expertise for the State at no cost. The request for volunteers asked for a commitment of nine to eighteen months on a pro bono basis. A copy of Rubin's Request for Volunteers is at Appendix 1 and is provided as an example of what might be applied by other organizations seeking to implement TQM with little or no funding.

To date, fifty volunteers have come forward to provide their expertise. The volunteers have served as coaches, trainers and mentors for twenty-six opportunities for improvement. To reflect the cooperative nature of the private and public sectors, these opportunities for improvement have been named "Governor's Quality Partnership Pioneer Projects." As of this writing, the anticipated success rate in quality process improvement for participating State organizations seventy percent.

According to Rubin, California also has a TQM recognition program aimed at the private sector. California's award program is called the "Golden State Award," and is presented to recognize achievers in the private sector. There are no State or municipal level awards from the State for public sector TQM achievements. (12)

Municipal TQM Efforts

The federal TQM program was driven by Presidential interest and as such, became mandatory. Most state-level TQM program participation is voluntary. At the municipal level, there is very little municipal involvement in TQM programs and the results are contradictory.

According to Berman and West, only 11 percent of cities that they surveyed have a "substantial " commitment to TQM. Their finding was based on a 1993 national survey they conducted of cities of over 25,000 population using random sampling techniques. They used four criteria to determine organizational commitment at the municipal level to TQM: (13)

- (1) the number of functions in which TQM is used;
- (2) the availability of training efforts in TQM for employees and senior managers;
- (3) the implementation of TQM (e.g., group awards); and
- (4) the commitment of other organizational resources to TQM such as consultants, councils, and budgets that aim to further TQM. (14)

The criteria used in the Berman and West survey were sound measures when assessing the level of TQM implementation in the public sector.

There are some municipal organizations that have successfully developed and implemented TQM programs. Their success can be directly attributed to the support ("substantial" commitment) by the elected officials. Without this type of support, TQM cannot be effective. Municipalities that have successful TQM programs have become benchmarks for others to learn from their endeavors to improve services, timeliness and achieve cost reductions. The three cities selected by the author for illustration are Austin, Texas; Madison, Wisconsin; and Sunnyvale, California.

Austin, Texas, started with a development group (advisory council) that identified customer service as the issue requiring the most improvement. Austin developed a program called B.A.S.I.C.S. (Building Austin's Standard in Customer Service). This program was begun by a small group of quality-conscious people

from the community. The cadre included business and professional people from public and private organizations.

Their first step in planning the implementation of a TQM program for Austin began with educating the leadership of the community about TQM and how the community as a whole would profit. They started by working with the mayor, the chairman of the chamber of commerce, and business and government leaders. As the leadership became more involved, they became extremely interested in the benefits of TQM. (15)

The Austin group recognized that the key elements of garnering senior leadership and management support are vital if TQM is to have any chance of success. Cooperative team development of leadership and management is essential for identification of the desired outcomes.

Another city that has experienced success with TQM is Madison, Wisconsin. Madison used TQM techniques in improving productivity and quality in the city's police department. The Madison Police Department (MPD) was experiencing budget overruns in the overtime category. A team was formed to begin TQM analysis of the problem. Cause and effect studies were performed along with root cause analysis. Flow charts were created and studied, as well as applying statistical analysis to understand the operation and capability of the system.

Using these TQM tools and techniques, the team was able to determine that the MPD was not under-staffed, but that overtime costs were high because the MPD members were taking their remuneration in cash as opposed to the alternative of compensatory time away from duty. The team also discovered that the reason

for taking cash in lieu of time off was that the MPD members could not consistently schedule their compensatory time off so that the member could avail themselves of that option. Frequent court appearances, along with tight duty schedules, compounded the cash requirement for overtime.

Madison's team for this study was made up of six graduate students from local colleges and three MPD members. Other than the regular salary of the three MPD members, there was very little cost; this analysis was done on a gratis basis in exchange for the experience gained by the graduate students. (16)

Sunnyvale, California, has embraced TQM as a way to improve productivity and costs of services while maintaining the lowest tax and fee structure in the region. Sunnyvale's approach to TQM was to model it after successful TQM business programs. Sunnyvale has incorporated three basic principles of business - long-range planning, performance budgeting, and performance auditing - to achieve their success. Sunnyvale's long-range planning process resulted in strategic plans that span a twenty-year period. Their strategic plan addresses all areas of municipal concern ranging from law enforcement to air quality enforcement. Sunnyvale's financial plans are based on a ten-year cycle that address projected revenues, and capital expenses. The financial plan supports their two-year Performance-based Budget. Sunnyvale's Performance Audit/Analysis portion of their TQM program requires periodic performance audits on a random basis. This assures integrity of the audits. The audits serve two functions. They ensure resources are being used as they were authorized and

determine whether the greatest effectiveness and efficiency are resulting from management decisions. Sunnyvale's city management believes that this system has become self-perpetuating since management responsibilities are delineated and evaluations and pay are based upon performance in accomplishing the individual's mission. (17)

Sunnyvale is an example of a municipality that has used TQM to succeed. The end result may be a "win, win, win" situation.

Citizens Win. Residents and businesses receive excellent services and high value in return for their tax dollars. Costs, such as taxes and fees remain low. Services have not been affected by budget losses facing California cities from state government decisions, or economic changes as a result of recession.

City Council Wins. For the elected officials in Sunnyvale, the system enables them to achieve long-term, tangible results. They are freed from the burden of complaints and involvement in day-to-day management of the city. As policy makers, councilmembers can concentrate on policy goals and service levels to respond to community needs.

Employees Win. Sunnyvale's staff is able to focus on achieving results. Employees are empowered to seek innovative solutions to meet service-level goals. The compensation package is highly competitive, and the management employees are rewarded for exceptional performance. The city has been able to maintain stable employment without resorting to layoffs and cutbacks. (18)

Sunnyvale's apparent success has been cited by Osborne and Gaebler in their book, Reinventing Government, How the Entrepreneurial Spirit Is Transforming the Public Sector, as a prime example of how TQM can work in a municipality. (19)

In contrast, the author was a participant observer with the

Corona, California, Reinventing Government Group (CRGG), a 10-member mayor-appointed citizen governmental reform commission. Its purpose was to evaluate the City of Corona and make recommendations for improving the City's municipal functions and to help Corona prepare for the future. In short, the CRGG became a change agent.

One agenda item the CCRG wanted to establish was the development and implementation of a TQM program for the City staff. Studies demonstrate that the implementation and adoption of TQM improves productivity, eliminates duplication and frees employees to focus on tasks that often had to be neglected due to lack of time and available staff. (20) The CRGG viewed TQM as a viable solution to improving City services while keeping operating costs down without additional personnel.

The CRGG failed in its attempt to initiate a TQM program for Corona for two reasons. First, the group became disillusioned by the fact that the City Council did not pursue development and implementation of a TQM program. There was no support or commitment from the City Council, City Manager or City staff to have TQM implemented. Political barriers were built to thwart the CRGG's efforts. It is the author's opinion that the failure was due to lack of leadership of the CRGG that caused the focus on the original goals to be lost. An effective leader would have kept the CRGG's focus on all of the group's goals. Second, the Corona City Council became disenchanted with the CRGG as a whole. The Council viewed the actions of the CRGG as going beyond the original mayoral charter when various

CRGG members' hidden agendas became apparent. Two members of the ten-member organization were using the CRGG for developing press exposure aimed toward their bids to run for the upcoming Corona City Council elections. Political credibility was lost and the opportunity to effect change was lost. The experience with Corona is more typical when TQM is attempted at the municipal level.

Local Area Survey

To determine the number of local area municipalities participating in TQM, the author conducted a telephone survey of twenty-five Southern California municipalities selected at random from the Inland Empire area which encompasses San Bernardino and Riverside counties. Of the twenty-five cities contacted, 100 percent responded to questions about TQM programs in their cities. The survey revealed that none of those municipalities had implemented TQM, nor were they planning to do so. The most prevalent comment (85 percent) was, "We can't afford to run the city now. How could we take on another program when we don't have funds to meet our existing programs?" (see Appendix 2). Maybe the question should be answered, "How can you afford not to?" TQM is not an add-on program, but a method to make existing programs work more effectively and efficiently. Training for the city may be obtained by using California's request for volunteers approach, contact local institutions of higher education, or request assistance from area professional associations that specialize in TQM for their assistance. Using

these strategies may yield a cadre of volunteer experts to assist public organizations to begin a TQM program. The costs to establish a TQM program would be for printing of training materials, employee time to attend training, and utilities for the organization's training room.

The level of TQM municipal participation found in the author's survey does not correspond to Berman and West's national survey that found TQM was being implemented with substantial commitment by 11 percent of municipalities. The contradictions may arise from the author's micro area survey as opposed to a national survey, the use of different criteria in the instruments and the limited sample surveyed.

The author's participant observation of the Corona Case also confirms the conclusion that TQM implementation in city government can encounter severe barriers if leadership is not present and political "self-interests" dominate TQM planning and implementation.

Once the President Clinton, through the NPR, decided to implement TQM at the federal level, any potential bureaucratic obstacle was overcome. From the author's experience with the federal government has found directed by the President rarely meet with resistance from federal employees. State level TQM program encountered barriers to implementing TQM, such as the program being voluntary and lack of funding. Municipal efforts to implement TQM have met with minor success as a whole. However, successful benchmark cities provide inspiration to other municipalities considering implementing TQM programs.

However, commitment and political support remain indispensable ingredients for success.

The major response to the author's survey may indicate that part of the issue of not having a TQM program is fiscally based, the other part may be due to other obstacles that need to be overcome. The next chapter discusses in more detail obstacles that must be overcome if a TQM program is to be successful.

Chapter 2

Obstacles to TQM Programs

Obstacles

For government agencies at any level considering TQM implementation, there are obstacles that must be addressed and overcome.

When faced with obstacles to goal achievement, governmental organizations must take actions to understand the barriers, and decide what to do to overcome them. Public sector organizations not practicing TQM are beginning to consider TQM program implementation to make government more efficient, cost effective and responsive to the public.

Implementing a TQM program is not an easy process. There are major obstacles to be overcome. Obstacles observed by Mr. Tom Mosgaller, Human Resources Division, City Of Madison, Wisconsin, is based on Dr. W. Edwards Deming's discussion of the "seven deadly diseases of management:"

1. Lack of consistency.
2. Short-term thinking.
3. Personal review systems or evaluations of performance, merit ratings and management by objectives.
4. Mobility of management: job hopping.
5. Use of visible figure only for management.
6. Excessive medical costs.

7. Excessive costs in liability, fueled by lawyers who work on contingency. (21)

The most significant disease Mosgaller discussed is the one that is frequently seen in the public sector -- "short term thinking." According to him, this is probably the primary barrier faced by most public sector organizations when they attempt to implement total quality management (TQM). The existence of this barrier is one that needs to be addressed, especially since the leaders of public sector organizations are elected for terms averaging from two to four years. The nature of the relatively brief tenure-of-term often forces the elected leadership to focus almost exclusively on short-term issues. It is this "short-term thinking" process that has created long-term problems and caused potential solutions to be overlooked. Mosgaller's observation is validated by this author's experience as a participant observer with the CRGG. The city council definitely focused on the immediate short-term problems and not addressing the long-term issues.

TQM is a long-term discipline; long-term not only in training and application before tangible results are recognized , but also requiring long term commitment to improvement of processes and services. (22) Short elections cycles tend to drive the focus of the elected officers to immediate issues that are often the most pressing in the minds of the voters, who demand accountability for acute problem resolution. Voters want to see action -- action to solve the current problems. This type of voter paradigm typically favors short-term thinking greatly and makes long-term planning difficult, if not nearly impossible.

This dichotomy between short elections cycles and long-term problem can be overcome. The solution requires that the elected officials to make a concerted effort to focus on the problems that are chronic and have long-term implications. The officials then must determine what actions are necessary to effect resolution. In Chapter 1, the author cited three successful TQM programs, Sunnyvale, California; Madison, Wisconsin; and Austin, Texas. The elected governing bodies of these cities were able to overcome the short election cycle versus long-term planning dilemma. The results have provided long-term solutions, reduced costs and improved efficiency.

Another difficulty public sector organizations frequently encounter is that TQM was originally created to improve processes and products, to better the profit base for a commercial company. TQM is commonly viewed as emphasizing the profit and loss motivation of the private sector. A clearer definition of the quality improvement programs is needed in the public sector, especially since the public sector's main output is service to the public rather than commercial profit. For many government services (e.g., welfare and police) there is no "bottom line" profit figure from which to measure "success." However, there *are* measurements such as crime rates, customer service processing times, etc., which can provide meaningful assessments.

According to Mr. Blue Wooldridge, Associate Professor, Department of Public Administration at Virginia Commonwealth University, there are ten major categories of obstacles that must be overcome in order to complete a TQM

feasibility analysis. The feasibility analysis is conducted to determine the likely outcome should a TQM program be implemented. Although Wooldridge's article was focused on public sector improvement efforts of all types, TQM certainly falls within this realm. Here are Wooldridge's ten barriers that must be addressed and overcome if a TQM program implementation is to succeed:

1. Resources
2. Standards and Objectives
3. Inter/Intra-Organizational Enforcement Mechanisms
4. Characteristics and Disposition of Implementing Agencies
5. Disposition of the Implementors
6. Characteristics of the Innovation
7. Future Economic Conditions
8. Social Factors
9. Political Environment
10. Uncertainty of Knowledge of Techniques or Administrative Procedures (23)

1. *Resources.* What funds, personnel, time availability and facility allocations are available? To what extent are resources dedicated to this program? What is the commitment level of top management? What is the level of political support - unions, citizenry, special interest groups, and organizational staff? What special personnel training is required? Is there in-house training capability or another source such as a university graduate program that could provide training as part of their graduate program? If not, is there a citizen or local company which might be available to assist in training on a gratis basis?

2. *Standards and Objectives.* Are the objectives of TQM clearly defined? Are they readily available to those who will be implementing the program and those directly concerned with the program? What are the expectations of the outcome of TQM after implementation? Are these defined in writing?

3. *Inter/Intra-Organizational Enforcement Mechanisms.* One must define the internal and external customer base that the TQM program implementation will

affect. How many inter/intra organizational entities are involved? What reward systems will be in place, e.g., symbolic awards such as certificates or material awards such as bonuses, time off, or a preferred parking space for a limited time period? What are the past or present climate of conflicts or cooperation levels of affected organizations?

4. *Characteristics and Disposition of Implementing Agencies.* What are the bureaucratic and political influence and structure of the organization considering implementing a TQM program? What is top management's commitment to empowerment? What is the receptivity of the organization to TQM implementation? What difficulties could be expected to be encountered with organizational cultures, e.g., organizational traditions, standard operating procedures, informal and formal chains-of command and leadership, basic operations modes, organizational values, or legal issues?

5. *Disposition of the Implementors.* Perception is reality. If one perceives something one way, then to that individual, that perception is reality. Therefore, several perceptions must be surfaced and addressed when implementing a TQM program. How much behavioral change will be required of the employees? What are the possible value conflicts? How threatened will the employees be with the TQM program? How secure are the employees' jobs? This is especially true in today's cut-back management. How do the unions or organized bargaining units perceive the TQM program? How will the resistance to change be overcome? (Resistance to change is discussed in Chapter 3.)

6. *Characteristics of the Innovation.* What are the advantages of the proposed program in relation to existing practices? Will this new program be compatible with the organizational culture? Is it possible to work a pilot program on a smaller scale so that other sections of the organization may observe the results?

7. *Future Economic Conditions.* How will future economic conditions affect the TQM program?

8. *Social Factors.* What is the public's opinion of implementing a TQM program? Do the political power holders support implementation? Does implementing a TQM program provide visible, tangible results to the citizen-voters?

9. *Political Environment.* Is implementation based upon a recent crisis or major event? Who are the opposing parties? Have they developed a united opposition? What are their concerns? Are there any legal ramifications of implementing a TQM program?

10. *Uncertainty of Knowledge of Techniques or Administrative Procedures.* Is the organizational culture unstable? What new technologies or procedures are involved with a TQM program? What is the disposition of administrators charged with the responsibility of implementing TQM programs? What are their paradigms about TQM programs? (24)

The areas of possible conflict described by Wooldridge are valid and must be addressed. Ignoring these obstacles and not considering the issues that they raise portends doom for TQM implementation. The author's experience with the Corona Reinventing Government Group shows that had the group addressed these obstacles instead of ignoring them, their goals and objectives may have met with more success.

1. The CRGG did not assess the City's resources in relation to implementation of TQM.

2. The CRGG did not define the standards and objectives of TQM in relation to the City management culture.

3. The CRGG did not define the TQM program nor the inter/intra-organizational mechanisms.

4. Corona's top management commitment to TQM was not developed by the CRGG but dictated that TQM was going to be implemented.

5. By offending the City's elected leadership responsible for TQM implementation, the CRGG encountered resistance. The disposition of the implementor was negative.

6. The characteristics of the innovation of TQM were discussed among the CRGG, but the advantages of TQM were not disseminated outside the group.

7. The CRGG did not provide an assessment of the impact of future economic conditions upon TQM in Corona.

8. Social factors were ignored. The CRGG wanted TQM, but did not consider whether or not the rest of Corona's citizens wanted TQM.

9. The political environment was the driving factor for TQM to be considered as a program to help in reducing Corona's operating costs and improve efficiency in lieu of imposing a utility tax to meet budget requirements. However, the CRGG did not analyze who the opponents to TQM were, the concerns about TQM or legal ramification of TQM implementation.

10. The CRGG did understand the technologies of TQM and the administrative procedures involved. The group did not have the opportunity to share their knowledge with Corona's leadership because they had alienated those who could have approved TQM implementation at the beginning of the CRGG's efforts.

The CRGG had the opportunity to help Corona implement TQM, but through the group's lack of sensitivity and political savvy, the attempt failed.

A common thread woven throughout this chapter points to keeping communications channels open to enable participants to overcome their resistance

to change through a better understanding of the TQM program. The next chapter discusses the dynamics of change.

Chapter 3

The Dynamics of Change

Understanding Change

Before a discussion of overcoming resistance to change, one must first understand the dynamics of change. Change represents an emotional transition. It is important to remember that people do not resist change in and of itself, *they resist being changed.* (25) This is certainly true in the case study the author conducted with the CRGG. The resistance to the prospect of change was encountered at all levels of the city staff. The symptoms of resistance were manifested as refusal to communicate with CRGG members, lack of interest, and numerous appointment postponements by city staff. The city staff appeared to exhibit group denial that anything could be inefficient as far as Corona's city operations were concerned.

From the author's experience and observation, people going through a change process seem to experience the same types of responses as if grieving:

denial -- "No, this can't be;"

anger -- "There is no way I'm going to do this;"

fear -- "If they do this I may lose my job;"

depression -- "There's no point in going on."

These responses need to be anticipated before any change to the norm is considered.

In addition, organizational change involves three conditions: *future state*, where the organization is envisioned by its leadership to be bound; *present state*, where the organization is; and *transition state*, the process through which the organization evolves to attain its *future state*. (26)

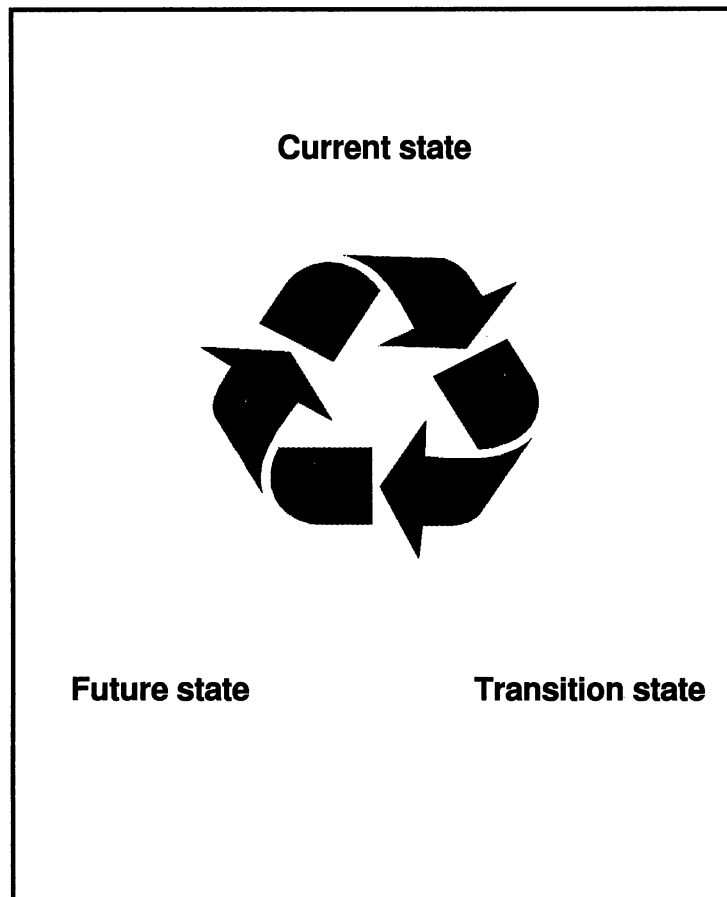


Figure 1. Organizational Change Process

Figure 1 portrays the cycle of organizational change. The current state is the organization as it exists now. The transition state reflects the fact that no change is

instantaneous; a state of flux will be experienced enroute to the future state. The future state represents the level to which an organization aspires. Each state progresses through the next until a new change occurs.

Why do public sector organizations change? There may be political reasons for organizational change, such as a direction of the governing body to improve customer service. There may be fiscal considerations such as being forced to "right-size" due to lower-than-anticipated revenues. Often, changes are being demanded by unions, employees, the citizenry, interest groups, other levels of government, or shifting societal values. The nature of change requires analysis if successful implementation is to occur.

Overcoming Resistance To Change

Resistance to change in the public sector may take many forms. The mental form may take several shapes, ranging from strong vocal opposition to benign neglect, to rumor and innuendo. Vocal opposition may result in heated loud defiance of change. On the internal side, the resistance to change may result in a more serious outcome: a full-blown strike by public employees. On the external side, the citizenry may demand a recall of elected official(s). Internal and external reactions of benign neglect may manifest as, "If we ignore it, it will go away," or "This is just another 'program of the month' they want to try. It won't last, so we'll wait-them-out." The type of resistance most frequently encountered when beginning implementation of a total quality management program is the latter. The keys to overcoming resistance lie in identifying the nature of the resistance, the reasons for resistance, and the sphere of resistance. A sphere of resistance may include unions, employees, legislative function (city council), state statutes and

mandates, supervisors, or citizenry. The author developed the matrix illustrated in Figure 2 to provide insight into where resistance spheres may exist.

Type of Change: _____								
Resistance to Change		Legislature	Statutes	Mandates	Supervisors	Employees	Unions	Citizenry
	High							
	Medium							
	Low							

Figure 2. Resistance Indicator

By assigning numerical scores within a low range of 1-3, a medium range of 4-6, and a high range of 7-9, a simple statistical analysis reveals where the greatest opposition to change will likely be encountered. The higher the number, the more resistance is likely to occur. Once the area of opposition is identified, a strategy for influencing the opposition can be developed. An example of the statistical analysis might be the following:

		Type of Change: <u>Implement new hours for the city offices.</u> <u>Changing from M-F 8:00am - 12:00pm and 1:00pm - 4:00pm to</u> <u>M-Th 9:00am - 1:00pm and 2:00pm - 5:00 on F 12:00pm to</u> <u>6:00pm.</u>						
Resistance to Change		Legislature	Statutes	Mandates	Supervisors	Employees	Unions	Citizenry
	High		NA	NA		8	9	
	Medium							
	Low	1			1			1

Figure 3. Resistance Indicator (Example)

In figure 3, the legislature (in this instance, the city council), the supervisors and the citizenry offer little resistance to a change in city office hours. Neither statutes nor mandates influence this sample. High resistance, however, originates from the employees and unions. The strategy to overcome these spheres of resistance may be to provide information to the employees and unions, explaining the reasons for change, along with anticipated advantages, to the employees and unions. Other avenues to overcoming union and employee resistance to change could be by (1) including both factions in the discussion, planning and implementation of the change, or (2) through collective bargaining.

Trust and understanding are also essential if resistance to change is to be overcome.

Trust of any person in any situation is earned over time....Making demands on people without a prior, carefully developed sense of trust will usually lead to disaster. Without trust, people have little faith that their managers will save them when the water rises over their heads."
(27)

Without the development of trusting relationships throughout any public entity, a TQM program will not survive.

A city, for example, is no exception. The governing body and employees must have an established trusting relationship for a TQM environment to thrive. The trust among the parties will facilitate empowerment and improvement in the services the city has to offer to its internal and external customers. Trust can be a crucial ingredient to overcoming resistance to change.

To gain trust and credibility for TQM implementation, public sector quality officers (facilitators) must be able to demonstrate that TQM works. Borrowing from private sector TQM techniques, modified to meet public sector TQM requirements is the most common approach. The author's experience has shown that by illustrating where the similarities lie between public and private sector TQM, private sector organizations not as skeptical of this new program. It has been proven to work. Most TQM facilitators have gone about implementation by adapting the private sector elements to meet the needs of the public sector. Most TQM facilitators research the available private sector's materials and select the methods that most closely parallel their working environments. The parallel approach adds a measure of familiarity and reduces stress to overcome resistance toward the organization's new TQM program.

Most public sector quality officers have been successful by selecting the closest tools to meet their situation by using the private sector and including members of the private sector to assist the public sector quality officer develop their programs. The public sector organizations that have experienced major success are those that have included the private sector experts as part of the organization's Advisory Council. (28)

Advisory Councils

The author's experience has shown that the use of an advisory council to formulate TQM policies and implementation strategies is key often to facilitating the organization's cultural transition and helps to identify and overcome organizational resistance. The composition of the advisory council must take into consideration factions that may have an impact upon the success or failure of the implementation effort, e.g., governing board, chief administrative officer (CAO), department heads, and staff.. In addition to this cadre, representation from the citizenry, private sector experts, interest groups, suppliers, and contractors needs to be included in the invitation to participate in the advisory council. Even though some (or many) of those invited to join the advisory council may decline, the opportunity to become a member should be afforded. This also serves as a "safety valve," diluting later criticism by those who were invited, but declined to join.

By having a broad-based representation on the advisory council, the concerns by various representatives may be raised and addressed, and potential roadblocks averted through open communication, better understanding of participants points of view, and consensus.

The role of the advisory council is to assess the public organization's current state to assess if a TQM program is needed. If TQM is needed, it develops the vision of the organization -- what the organization will become in its future state and the organization's purpose. The advisory council creates the mission statement that is a precise definition of what the organization does, and establishes goals and objectives for the transition state. The advisory council also advises the CAO on TQM, serves as a forum to discuss TQM issues, and ensures organization-wide focus on improvement of common processes shared throughout the organization.

Once the advisory council has overcome resistance from the TQM program participants, and established the direction of the organization's TQM program, TQM implementation can begin. The next chapter discusses TQM implementation and provides an original model for implementing a TQM program developed by the author.

Chapter 4

Implementation of TQM

Implementation - The Beginning

TQM is a philosophical concept that is based on leadership style, work environment (training and resources), and pursuit of the continuous improvement process. For any public sector organization to begin a TQM program there must be buy-in (acceptance of the concept) at all levels of the organization for the program to be successful. While it is necessary to have buy-in at all levels, a TQM program that is destined to become part of the institutional fabric must be driven, top-down, throughout the organization. Leadership must demonstrate both the belief and the commitment to make TQM part of daily organizational life -- what Berman and West called "substantial" commitment. This means that management must take the first steps to "walk the walk and talk the talk" of TQM -- anything less will merely doom the effort to another "management program-of-the-month that will go away if we wait long enough."

In their book, Excellence in Government -- Total Quality Management in the 1990s, David K. Carr and Ian D. Littman, developed a continuous improvement process (figure 4) that is the underlying foundation of TQM philosophy. (29)

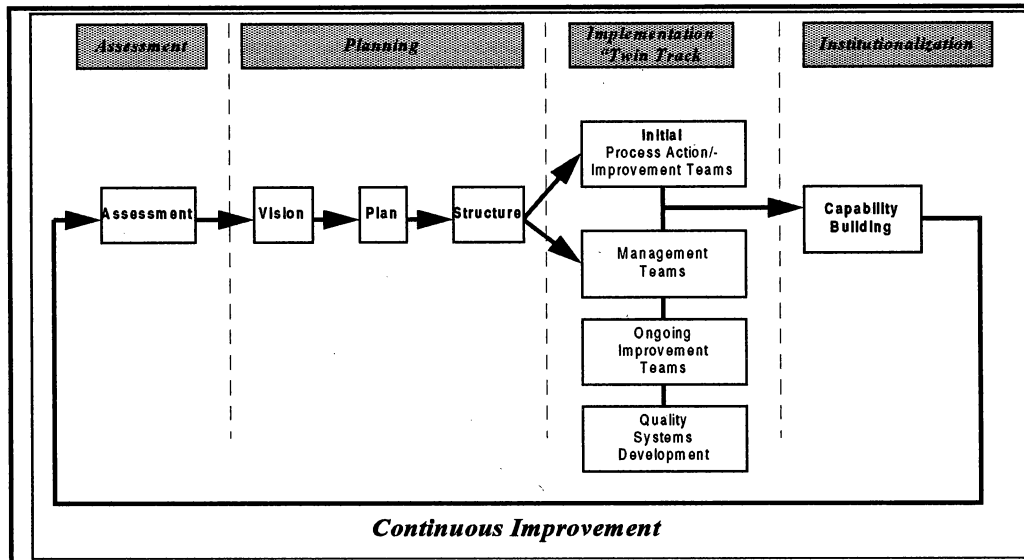


Figure 4. Continuous Improvement Process (30)

First, an as-is assessment of the quality status of the organization must be accomplished to determine areas of opportunities where improvements can be made. This includes money (including the costs of *not* having quality), performance levels, how schedules impact customers, and how the political climate relates to TQM both internally and externally. The internal political climate may be driven by union opposition, the external political opposition may come from special interest groups, business or the citizenry at-large. The author's experience has found that representation of these various political factions on the organization's TQM advisory council makes garnering support less difficult. Their participation allows the various factions to have a voice in the development of the TQM philosophy, encouraging

possible changes in leadership style and development of a positive environment that encourages TQM.

Money is often a main driving factor in implementing TQM programs. TQM has been credited with saving not only dollars, but labor requirements as well. One generally accepted data point on the cost of not having a quality program is that many service organizations spend 35 percent or more of their resources to fix mistakes such as billing errors, incorrect correspondence, duplicating efforts, and exhibiting a lack of concern for detail. These performance deficits cost money. In addition, the scheduling of office hours may have a negative impact upon both internal and external customers. In Figure 3, we discussed a change of city office hours to allow more accessibility by external customers -- the public. By shifting the hours to offer a later window of opportunity for the public to conduct business later in the day, the external customers are less inconvenienced. This move can help foster goodwill for the city and its employees, and builds a stronger support base for future city quality improvement efforts.

Carr and Littman's Continuous Improvement Process illustrates an ideal continuous improvement process. Their process assumes that a TQM philosophy has been adopted, and that no opposition exists. (31) In Figure 4, the vision is developed by the city leadership of what the organization is to become, or as illustrated in Figure 1, the future state. The vision is a compilation of customer expectations, organizational culture changes, and available resources and capabilities.

The plan is the written roadmap of how the vision will be accomplished. The structure of the implementation process will reflect the culture of the organization. The implementation process structure should be temporary. It should exist only as required to keep the momentum of implementation going until the CPI process

becomes part of the organizational culture. It is important to remember that the structure of the implementation process must reflect the vision and the plan, and maintain an identical focus.

Figure 4 also illustrates a "twin track" implementation process. The twin track CPI implementation process supports both short-term and long-term implementations. The short-term is used as a pilot program to gain experience and success with the CPI process. A pilot program may be used to demonstrate to observers that CPI is a user-friendly, cost-saving tool that will improve their departments and contribute to the overall improvement of the organization as well.

The long-term implementation process is used for instituting organization-wide change. It is useful in organizational restructuring, which requires careful planning and installation to be effective. The long-term implementation process is where improvement teams are developed and trained. They are schooled in all the necessary skills to be an effective team. Trust must be built within the teams and among the external customers. The teams are created to improve specific processes and are disbanded once management is satisfied with the improvement process results. As quality systems are developed and installed, these team members then become available to move on to other process improvement issues as a team, or as members of other teams. Often the ability to shift team members to other improvement teams as individuals affords the various improvement teams additional insights that an experienced team member brings to a newly formed process improvement team. (32)

Before CPI is implemented, specific areas for improvement or areas of opportunity must be targeted. Identifying what needs to be done is a daunting issue. Determining who the customers are and their relationships to the organization can be a challenge. Are the customers internal or external? What are

the customers' needs? Can the organization meet the customers' needs and still attain the organizations goals and serve its purpose?

In addressing these questions several techniques can be used. The least threatening is a survey of what has been suggested, either through a formal or informal suggestion program. Another source is to review customer complaints: "What issues are the most irritating when dealing with public sector personnel and processes?" If this form of survey does not provide insight, then a formal survey may need to be developed.

Once a survey is structured, conducted and thereby results analyzed, the advisory council needs to select the training events which will most efficiently move the organization toward their TQM goals.

Selection of Best Method(s) of Training Techniques

Training is cascaded top-down throughout the organization. Specifically, training will provide city employees with knowledge and skills they need to continually improve their outputs--the services they provide to their internal and external customers. It can be successful only in conjunction with other means; changes in management behavior, the service improvement system, communication,. . . (33)

Training provides every employee with an understanding of the purpose of the CPI process and TQM's philosophy by providing the working knowledge of the tools and techniques used for service improvement. This is an area where the organization's advisory council becomes invaluable. The advisory council, in concert with a cadre of volunteer TQM professionals and graduate students, can help design the types, levels and intensity of training needed to meet the organization's TQM goals and objectives. Each level and type of work needs to be assessed by a trained TQM team in concert with each department head, to

determine what tools and training techniques will work best for their particular department.

Some departments function at a higher cognizance level than others. This is due partly to the types of skills required to perform the department's specific tasks. Skills in a municipal financial department may require facilitation with numbers, spreadsheets, and interpersonal skills; the street maintenance department may operate with a lesser formal skills knowledge base and be more manually oriented.

Once the level and types of knowledge and skills normally required in accomplishing day-to-day job tasks have been identified, then TQM skills training techniques can be selected to mirror each department's normal information processing patterns. The mirroring aspect of training in the various departments presents a less threatening environment. If the training techniques are presented in a format familiar to ones encountered in the trainees' standard work environment, the department members are more likely to grasp the concepts quickly and incorporate them into their daily work routine.

In the author's experience, TQM is seldom successfully implemented from a platform teaching approach. Skilled facilitators often move an organization quickly into TQM, imparting knowledge as each group is ready for it. This "learning by doing" approach of facilitation is frequently very effective.

Facilitators

TQM facilitators are used to act as an "honest broker" during TQM team activities, to keep the team focused on the process that is under scrutiny. A lead TQM facilitator needs to be identified. The role of the TQM lead facilitator is to

receive TQM training through formal courses, keeping abreast of the latest TQM developments, develop training programs for the organization and train the organization's facilitator team. Having a trained TQM facilitator team affords the organization the ability to have simultaneous process action teams working on multiple areas of opportunity.

TQM facilitator team leaders and their facilitator teams should gain extensive knowledge of all facets of TQM skills and techniques. Once a TQM team has acquired the skills, tools and techniques, the facilitator will then be able to meet with various supervisors at all levels to assess the types of training, TQM tools, and skills needed for each particular department. Not every employee or department needs to master all of the TQM tools and techniques to be able to improve processes.

To aid in implementing TQM, the author has developed a TQM implementation model.

Total Quality Management Implementation Model

Considering the authors experience as a TQM advisor and facilitator, the TQM implementation model is illustrated in Figure 5. The model is divided into four segments: decision phase, selling phase, training phase, and implementation phase. Discussions of each phase follow the five segment diagrams.

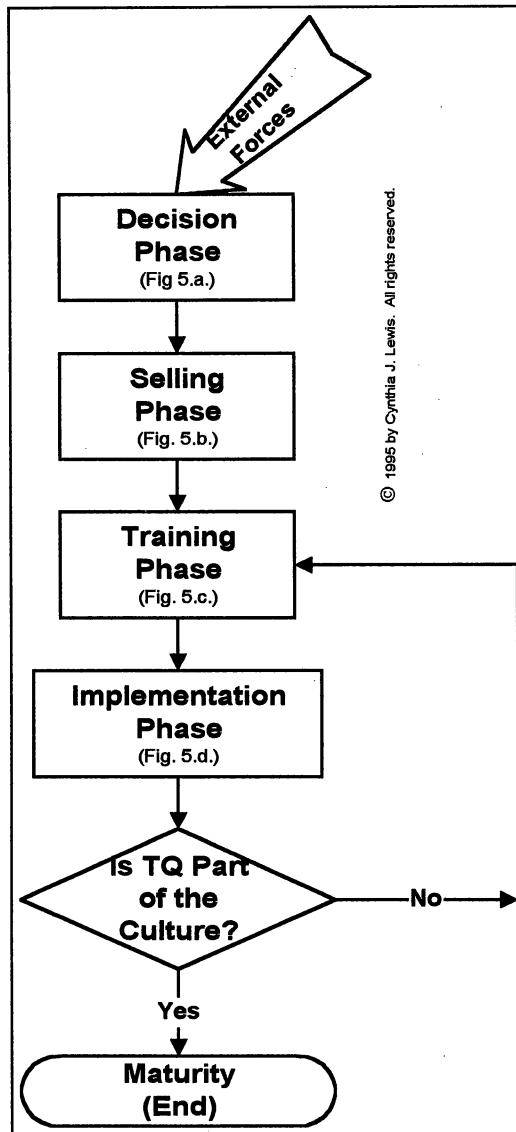


Figure 5. TQM Implementation Model (Macro View)

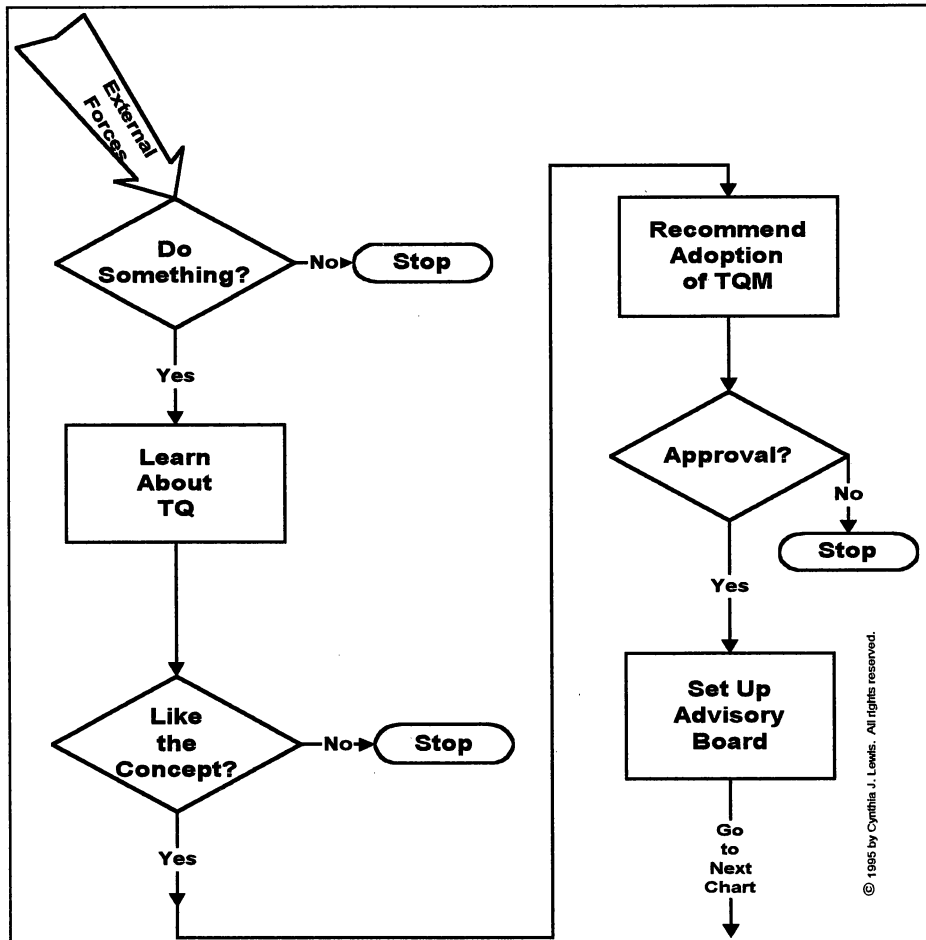


Figure 5a. The Decision Phase

Figure 5a. illustrates the first phase involved in TQM implementation. This figure outlines the steps often taken by the elected leadership when considering TQM adoption. For purposes of this paper, only TQM is considered; other management approach electives are not considered here.

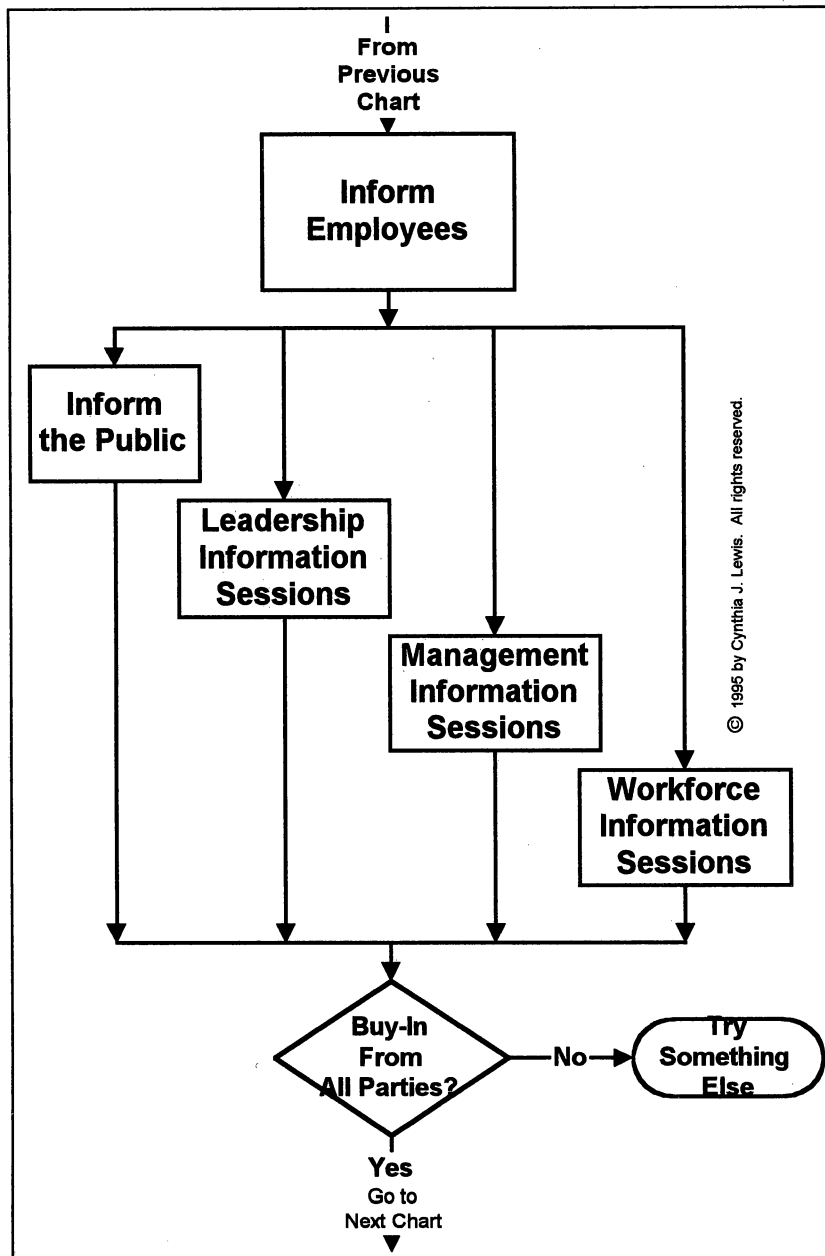


Figure 5b. The Selling Phase

The Selling Phase

The selling phase is the process of getting the participants at all levels to agree to training and use of the newly acquired skills in day-to-day operations of their functions.

An important point is that all levels of the organization must "buy-in," or fully accept, the TQM program philosophy. TQM must be supported from the organization's leadership, staff, suppliers, contractors, special interest groups, businesses, and the citizenry. The importance of these factions participating in the formation and development of the organizations TQM advisory council has been previously addressed.

Success stories such as Sunnyvale, California; Austin, Texas; Madison, Wisconsin; and the federal government support the premise that when TQM is implemented in the public sector, the overall cost of government goes down because errors are not as frequent and the costs of redoing tasks are reduced or eliminated. This drives costs down dramatically. To implement TQM in the public sector, various approaches need to be tailored to reach the diverse internal audiences that make up the a public organization.

The methods used in the selling phase will be directly related to the immediate audience being addressed. As an example, an analytical approach

may need to be used with the departments that are technical in nature. However, when approaching departments that emphasis creativity, a conceptual approach may be used. The key to getting "buy-in" or program acceptance is to emphasize the approach that recognizes the commonality of the group to gain alignment with group members, so the group can more easily relate to the new program.

Alignment will also make implementation of the new TQM skills transparent. This transparency will also allow for smooth transition of TQM into the organizational culture.

The selling phase is also the point at which the executive, i.e., leadership usually receives their training from a TQM professional consultant. Based on the author's experience, this level of training should be accomplished at a location away from the normal work place, often termed an "off-site" or a retreat. Locations away from the office almost always provide better forums for training to take place by precluding interruptions and keeping those in training focused on the materials being presented. These training sessions can be held locally during normal work hours to meet the training requirements, and at the same time, save the costs of transportation, lodging and per diem expenses. The executive level training course presented in this report is two days in length and is designed to provide an executive overview and forum to examine the organization's leadership style. More detailed training is gained as the management personnel attend the Team Member's Course. The importance of having the management level personnel receive their training along with the employees is that management's presence in

the classes sends a strong message that the entire organization is serious about quality.

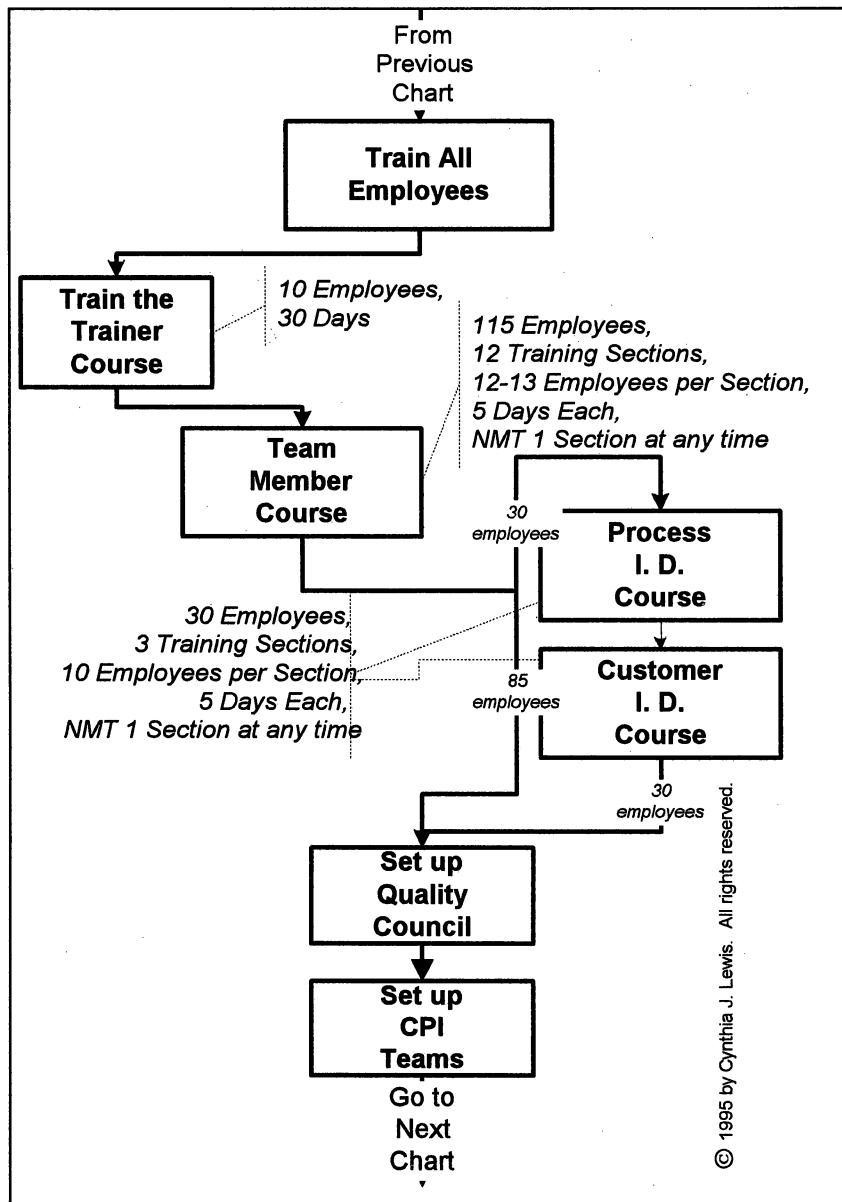


Figure 5c. The Training Phase

The Training Phase

The training phase is the learning portion of a TQM implementation program. The training phase has been segregated into separate courses to fulfill the needs of an organization. (See Appendix 4 for TQM course descriptions.) Not every employee needs all courses of training to become a quality team member. The time frame for each course is designed for one training section at any given time, to minimize the impact of absences from work locations.

It is recommended that each section be composed of a broad range of individuals from various departments. This provides a homogeneous mix and often opens avenues of communication not previously available. Departments frequently tend to function primarily amongst themselves and rarely go outside the functions of the department. By providing opportunities for interaction such as TQM training, communications channels are expanded and accomplishing inter-departmental tasks and resolution of conflicts becomes easier when a person knows a helpful contact.

After the initial TQM training has been completed, two employee quality advisement groups: the organization's quality council, which serves as the internal steering committee for the TQM program and the continuous process improvement teams which are the heart of TQM should be formed. These groups function as teams to find the areas of opportunity for developing and implementing improvements to processes for better efficiency, increased productivity at lower costs.

Teams

Once training has been completed, TQM teams may be formed to address areas of opportunity. These may be in any area where improvement is desired. Teams may be intradepartmental or cross-functional. The only requirement is that the team members have received prerequisite training for the tasks required. The facilitator will be needed to help the team(s) progress.

Special Teams

From time to time, members of specially trained groups may be called upon to work as a special team member on a specific problem the public sector organization needs resolved. Of course, careful coordination with the affected department heads and supervisors must be done if personnel are tasked from outside a department. Special teams are utilized primarily in cross-functional or highly complex TQM issues.

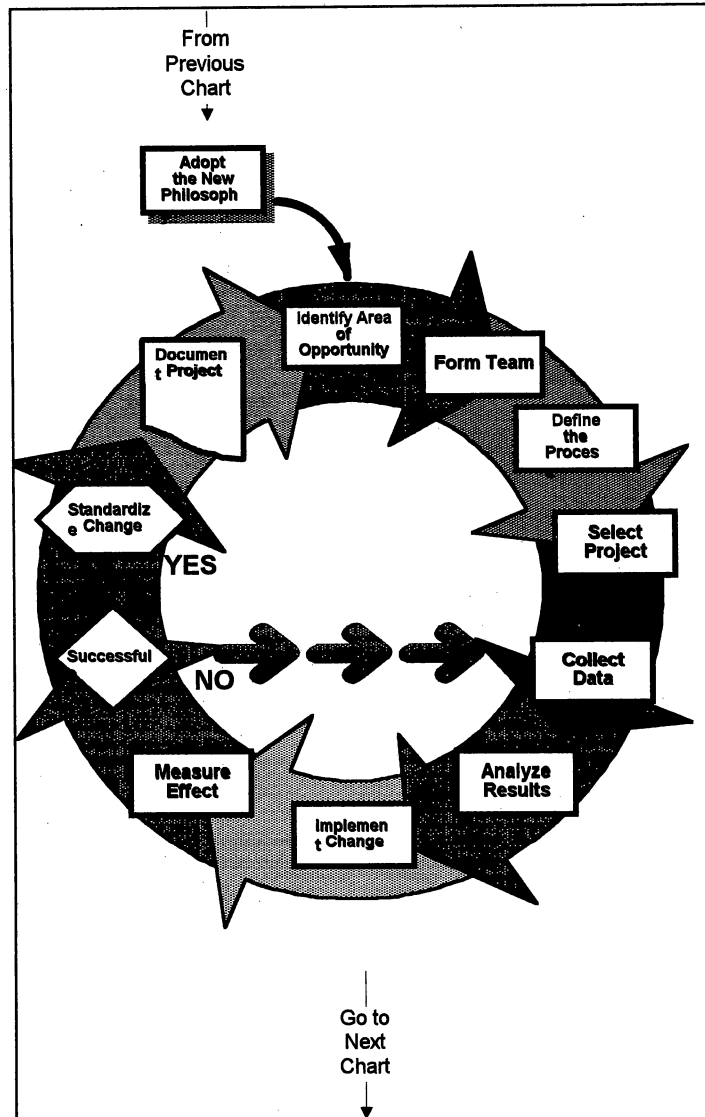


Figure 5d. Implementation Phase

Figure 5d. illustrates the most active portion of the implementation phase of the TQM program. It is a continuous cycle that becomes part of the public sector organization's culture.

Continuous Improvement Cycle

Figure 5d. depicts the most active portion of the TQM program. This model is for implementing process improvements. A variety of tools and techniques, such as brainstorming, flow charting, quality functional deployment charting, Ishikawa diagrams, Pareto charts, flow charts, cause and effect diagrams and other statistical process control processes can be used at various steps.

Once the area of opportunity has been defined (flow charted), a team is formed. The team then defines the tools and techniques to be used to define and improve the process. When a project has been selected, collect data and analyze the results to determine what process change or changes are needed. The team implements the change and monitors the effect through various metric tools. If the change is successful, the change is standardized throughout the organization. If the change is not successful, the team returns to the data collection point and proceeds through the process until success has been reached, or it is determined by the team that continued effort on this particular process has reached the point of diminishing returns on time invested and no longer can justify further investigation.

When a successful improvement change has been standardized, a process improvement plan is developed and the project is documented by plus/delta evaluation, and lessons learned. This documentation is then made available to other teams to help prevent the "reinventing- the-wheel" syndrome.

The cycle then begins again in a new area of opportunity or another project in the same area.

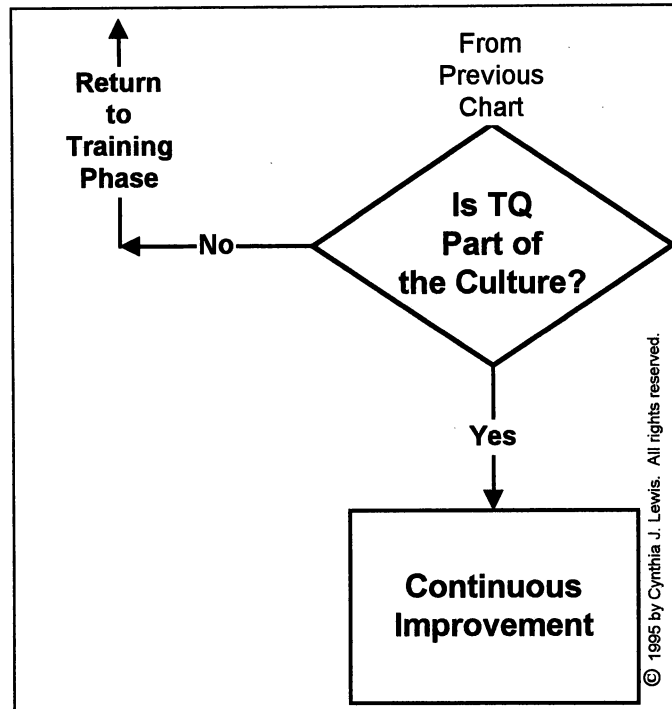


Figure 5e. The Culture Question

Figure 5e. illustrates the crucial question to TQM implementation:

"Has TQM become part of the fabric of the organization itself?"

The institutionalization of a TQM program takes place when TQM is no longer thought of as a program but has become second nature to the organizational culture and a "normal way" of doing business. Aristotle once said, "Quality is a habit not an act." At the moment TQM becomes an organizational habit (institutionalized), the TQM implementation process is complete and the momentum

generated by the process is now self-perpetuating. To keep the TQM program fine-tuned, a monitoring system is needed. The monitoring system may be as simple as feedback from both internal and external customers, customer surveys, and/or information-gathering forums. The data collected from these sources is valuable because it provides management and improvement teams with information about how successful their efforts have been and where other opportunities for improvement may exist. TQM is not fully implemented until the question posed by Figure 5e is "yes." At that point, the TQM philosophy has been fully integrated into the organization's culture.

Chapter 5

Summary and Conclusion

Summary

In summary, TQM is a management philosophy and approach to long-term success and better profits that originated in the private sector. TQM in the public sector became popular when the federal government successfully implemented TQM as the result of presidential desire. To become successful in adopting TQM in the public sector, the tools, and practices had to be tailored to meet public sector goals -- improve services, reduce costs and become more efficient. State governments increasingly recognize the need for TQM. Forty-three states have established TQM offices to assist TQM development in the private sector and reward their TQM successes. States also have recognized the need for TQM in government, but have made programs voluntary. On the municipal level, TQM is not being implemented on a wide-scale basis due to obstacles such as resistance to change and fiscal, social and political barriers that must be overcome if TQM philosophy is to be successful. Success stories such as Sunnyvale, California, Madison, Wisconsin, and Austin, Texas, illustrate what is possible when TQM is implemented.

The case study of Corona, California, Reinventing Government Group (CRGG), revealed what can happen if obstacles are ignored, alienation of city leadership, and lack of political savvy foil implementation of TQM.

TQM implementation and the continuous improvement process describe what is required for TQM adoption. The author developed a TQM implementation model to aid TQM implementation.

Conclusion

Implementing a TQM program in public sector organizations is not an easy process. For the TQM philosophy to be adopted, commitment from and involvement by the leadership must be established and well evident. TQM may require possible changes in leadership style that supports the employees in finding opportunities for continuous process improvement and implementing improvements.

Competition for funding and staff resources often make TQM training often a last priority. When funding was not available for California's voluntary TQM program, State Quality Coordinator, Ms. Caren Rubin used ingenuity to garner trainers, mentors and program developers through her "Request for Volunteers" program. People responded to the request that resulted in fifty volunteers from all levels of private organizations. The program cost for volunteers was zero. The only costs associated with the state-level program was the employees' time. Public sector entities at all levels have within their geographic areas professional organizations, businesses, consultants and institutions of higher learning from which to develop a volunteer pool to help establish a TQM program. The organization has only to request qualified volunteers.

If the leadership is firmly committed to the TQM program, staff resources must be made available for training, and team participation in continuous process improvement activities. While there is an initial "drain" of training time and funds, it is the author's experience that these costs are rapidly recouped, often within a few months. The recoupment comes from increased productivity and streamlined work processes.

Implementing TQM does have some obvious limitations. One limitation the author has noted from experience is that organizations have difficulty dedicating the short-term manpower and resource commitments required by the early stages of TQM. The early short-term loss of resources is difficult to "sell" to a skeptical public, which is often already frustrated by previous budget-driven service cuts. Another limitation is employees' experience itself: they must be convinced that TQM will become the driving philosophy behind organizational decisions and actions.

TQM will not be just another "management program-of-the-month," if it is properly implemented. TQM should never be viewed as a threat, but as a tool -- a tool to help organizations maximize their available funds by reducing costs, stabilizing employment, and improving services and efficiency.

The author's model has been proven through experience to be a solid plan for TQM implementation once "buy-in" is achieved at all levels, top to bottom.

TQM can and often does make public sector organizations more efficient, effective and responsive to customer needs. With revenues becoming more scarce from political and economic impacts, the public administrator needs to maximize all resources available. TQM is a proven tool to help meet that need.

Appendix 1

California's Request for Volunteers



State of California

GOVERNOR'S OFFICE OF PLANNING AND RESEARCH

1400 TENTH STREET
SACRAMENTO 95814

EDW. WILSON
GOVERNOR



(916) 322-2318

June 23, 1993

HARD SYBERT
DIRECTOR

TO: QUALITY PROFESSIONALS INTERESTED IN IMPROVING CALIFORNIA GOVERNMENT

On June 10th, Governor Wilson took California government a major step forward in its journey toward quality service by signing an Executive Order establishing the Task Force on Quality Government.

The Task Force's mission is to help the Governor introduce quality management principles throughout State government. Among other duties, the private sector-led Task Force will sponsor "pioneer projects" of interested work groups, and support them with training and consulting services.

State employees, including the Governor and his cabinet, need training and advice in understanding and applying quality principles and techniques. We are seeking your help in this ambitious undertaking. The enclosed Request For Volunteers (RFV) details the topics needed.

Facing another multibillion dollar deficit, the State cannot offer any monetary compensation for assistance. We can offer you the challenge of helping to revive California's economy by improving government services to its customers -- our corporate and individual taxpayers.

Please return the enclosed application to the designated addresses by no later than Friday, July 30, 1993. We look forward to an exciting partnership to make California government world-class.

Philip J. Romero
Chief Economist and Director,
Governor's Quality Enterprise

Sincerely,

Caren Rubin
Chair, Quality Working Group

REQUEST FOR VOLUNTEERS

INTRODUCTION

The Governor has signed an Executive Order (W-47-93) which establishes a volunteer Task Force on Quality Government. The Task Force will include members from private business, labor, and State and local government to advise the Governor and his cabinet on quality management policy and implementation. One of the Task Force's first responsibilities is the selection of "Pioneer Projects" within volunteer State departments. Pioneer projects will consist of work teams assigned to improve processes and achieve positive, measurable results within 9-12 months.

NEED

The State's executive management and Pioneer teams need training and ongoing advice on quality management methods and techniques. Currently, there are not enough trained State employees to meet these needs, and the serious State budget situation precludes the purchase of these services in the quantity required.

Three levels of training will be needed as follows:

<u>Level</u>	<u>Audience</u>	<u>Estimated # of Sessions</u>	<u>Estimated Hours per Session</u>	<u>Estimated # of Participants</u>
I	Governor and his direct reports	1	2-4	15-20
II	Agency heads and involved middle management	4-7	4-8	60-80
III	State employee's participating in pioneer project	10-15	8-16	200-400

THIS REQUEST

The State of California seeks volunteers to support its efforts to assess and improve the processes by which the State serves its customers. You are invited to volunteer to help State government implement quality improvement as a:

- **TRAINING PROVIDER:** To teach State executive management and Pioneer teams quality management methods and techniques. Training needs range from extensive, broad-based training for all participants in the Pioneer teams to just-in-time courses on

specific quality topics for a single Pioneer team. Training providers will be asked to commit as little as four hours for some just-in-time topics, or up to 400 hours for training for all Pioneer teams.

- MENTOR: To consult with, advise, and support Pioneer teams on implementing quality improvement processes. Mentors will be asked to commit as many as 200-300 hours of service over the duration of the project (from 6-18 months).

These services are solicited strictly on a "pro bono" basis. The State cannot guarantee that volunteers will receive future State consulting or training business as the result of providing these services.

Quality training needed

Quality Introduction and Concepts:

Ethics
Customer Satisfaction
Strategic Planning
Development of Vision/Mission/Goals
Assessment Skills and Methodology

- Organization
- Team
- Individual
- Customer (internal and external)

Dealing with Change:

- Organizational Culture
- Leadership Roles/Responsibilities
- Empowerment

Data Driven Decisions (Management by Fact)

Quality Teamwork:

Team Development/Group Dynamics
Interpersonal Skills
Meeting Management

Quality Tools:

Problem Solving Techniques
Process Definition and Improvement
Analytical and Statistical Tools
Management Planning Tools

SELECTION CRITERIA

The following characteristics are desired from organizations delivering training and mentoring:

- Possess line management experience
- Comprehensive knowledge of all stages of successful quality transformation (i.e., generalists, not specialists)
- Broad, flexible, pragmatic use of quality tools and models

These additional characteristics are desired from training providers:

- Experienced in delivering training to CEOs as well as rank-and-file employees
- Training in highly participative, exercise-oriented; exercises built around trainee's actual challenges
- Examples in training based on government or service businesses
- Your clients have produced documented results in meaningful measures (cost-of-quality and interpersonal)

RESPONSE

Interested parties should mail the attached to:

Robert H. Bridge
ADSTAR
Department 814, Building 012-2
5600 Cottle Road
San Jose, California 95193
Phone: 408-256-3009 Fax: 408-256-6760

Mary S. Fernandez
Department of Personnel Administration
1515 S Street, Suite 400NB
Sacramento, California 95814
Phone: 916-327-5254 Fax: 916-327-0568

REQUEST FOR VOLUNTEERS (RFV) PROPOSAL APPLICATION

Interested in being a training provider _____ mentor _____

A. Firm/group name: _____

Address: _____

B. Contact name: _____ Title: _____

Address (if different): _____

Phone: _____ Fax: _____

C. List of volunteer services proposed. See examples on page 2.

D. Briefly describe how you (or your firm/institution) could add value to the development and implementation of the Governor's Quality Partnership.

E. If you have implemented a quality process, briefly describe the methodology used and the results to date.

F. If you have helped other organizations implement a Quality process, briefly cite some examples/references, the methodology used and the results to date.

REQUEST FOR VOLUNTEERS

INTRODUCTION

The Governor has signed an Executive Order (W-47-93) which establishes a volunteer Task Force on Quality Government. The Task Force will include members from private business, labor, and State and local government to advise the Governor and his cabinet on quality management policy and implementation. One of the Task Force's first responsibilities is the selection of "Pioneer Projects" within volunteer State departments. Pioneer projects will consist of work teams assigned to improve processes and achieve positive, measurable results within 9-12 months.

NEED

The State's executive management and Pioneer teams need training and ongoing advice on quality management methods and techniques. Currently, there are not enough trained State employees to meet these needs, and the serious State budget situation precludes the purchase of these services in the quantity required.

Three levels of training will be needed as follows:

<u>Level</u>	<u>Audience</u>	<u>Estimated # of Sessions</u>	<u>Estimated Hours per Session</u>	<u>Estimated # of Participants</u>
I	Governor and his direct reports	1	2-4	15-20
II	Agency heads and involved middle management	4-7	4-8	60-80
III	State employee's participating in pioneer project	10-15	8-16	200-400

THIS REQUEST

The State of California seeks volunteers to support its efforts to assess and improve the processes by which the State serves its customers. You are invited to volunteer to help State government implement quality improvement as a:

- **TRAINING PROVIDER:** To teach State executive management and Pioneer teams quality management methods and techniques. Training needs range from extensive, broad-based training for all participants in the Pioneer teams to just-in-time courses on

Name of Organization_____

G. List by name, topics, and location (Sacramento, San Francisco Bay Area, Los Angeles, San Diego, Central California) the persons you (or your firm/institution) can provide to assist in the implementation of the Governor's Quality Partnership. If you need more room, please attach a second page.

NAME	TOPICS/EXPERT KNOWLEDGE	LOCATION	TRAINER/MENTOR

Appendix 2

TQM Survey of the Inland Empire

TQM Telephone Survey

Purpose: To determine if TQM has been implemented within a city.

Target Area: Inland Empire of Southern California

Criteria for Selection: Population under 200,000

Method of Participant Selection: Random

Size of Sample: 25 cities

To obtain answers to this survey, the questions need to be posed to the city administrator or their assistant.

Q 1. Have you heard of TQM? Yes _____ No _____

Q 2. Does your city have a TQM program? Yes _____ No _____

If no,

Q 3. Why?

STOP

If yes,

Tell me about your program.

Q 4. How long has your TQM program been in place?

Q 5. Ranking from high, medium to low, what would you say is the level of commitment to TQM from your elected officials?
High ____ Medium ____ Low ____

- Q 6.** Using the same criteria, what level of commitment to TQM from the city staff?
High ___ Medium ___ Low ___
- Q 7.** Have improvements been made as a result of TQM?
- Q 9.** Has any of the improvements resulted in dollar savings?
Yes ___ No ___
- Q 10.** What was the savings amount? _____
- Q 11.** As the result of TQM, have any efficiencies been realized?
- Q 12.** What are they?
- Q 13.** What feedback have you received from the citizens about their perceptions of your TQM program?

Results

Size of Sample: 25 cities contacted, 25 cities responded

- Q 1.** Have you heard of TQM? Yes 25 No 0
- Q 2.** Does your city have a TQM program? Yes 0 No 25

If no,

Q 3. Why?

Cannot afford to take on another program due to lack of funds for existing programs. 21

Don't have the time. 2

It will not work here. 2

Roster of Inland Empire Cities

Banning
Beaumont
Calimesa
Cathedral City
Chino
Colton
Corona
Grand Terrace
Hemet
Indio
Lake Elsinore
Loma Linda
Moreno Valley
Palm Desert
Palm Springs
Perris
Pomona
Rancho Cucamonga
Rialto
Riverside
San Bernardino
Temecula
Upland
Victorville
Yuciapa

Appendix 3

Glossary of Terms

Total Quality Management Terms

acceptance sampling

Evaluating a portion of a lot for the purpose of accepting or rejecting the entire lot as either conforming or not conforming to a quality specification or standard.

action plan

The steps a team develops to implement a solution or the actions required to make progress toward a solution.

activity

Segments of an effort that, when aggregated, become the sum of the effort.

adaptable process

A process capable of being changed to accommodate future requirements.

advisory teams

Provide a support system for process managers/technical advisors. (See local steering committees)

affinity diagram

A management planning tool used to translate large amounts of complex, apparently unrelated, verbal/language oriented data into natural and meaningful groupings of visual data.

area of popularity

An area/topic/macro-process that has been identified by management, customers, or a team as needing improvement.

assignable cause

The name for a source in a process that is not due to chance and therefore can be identified and eliminated.

attribute data

Data obtained by counting either conforming items or the occurrences of non-conformance.

brainstorming

An idea-generating technique that uses group interaction to generate many ideas in a short time period.

breakthrough

A change: dynamic, decisive movement to new, higher levels of sustained performance.

c-chart

Control chart plots data based on total count of nonconformances (defects) in a sample size that is constant.

cause

A proven reason for the existence of a defect.

cause and effect diagram

A structured form of brainstorming that graphically portrays relationships between causes and subcauses to an identified effect (problem). Also known as a fish-bone or an Ishikawa diagram.

chance cause

The name for a source of variability in a process that occurs randomly. (See common cause)

charter

A commitment by management in document form stating the scope of authority for an improvement group.

checklist

A sequential list of items to be attended to or of steps to be taken

check sheet

A data-recording table used to record the occurrence frequency of specific events during a data collection period.

chronic problem

A long-standing adverse situation that requires solution by changing the process or the status quo.

common cause

A cause or variation in a process that is random and uncontrollable.

consensus decision

A decision made after all aspects of an issue, both positive and negative, have been brought out to the extent that everyone openly understands and supports the decision and the reasons for making it.

control chart

A chart showing sequential or time-related performance of a process that is used to determine when the process is out of statistical control, using control limits defined on the chart.

control limit

A statistically derived limit for a process that indicates the spread of variation attributable to chance variation process. Control limits are based on averages.

controllability study

A study to learn if defects are operator controllable or management controllable.

continuous improvement

Operational philosophy that makes the best use of the talent within an organization to produce products or services of increasing quality in an increasing efficient way.

cost of quality

The cost of conformance (achieving quality) plus the cost of nonconformance.

critical dependencies

The interrelationships existing within or among processes that are primary drivers of defects or errors in a product or service.

critical mass

A group within the organization possessing the knowledge, position, power and leadership sufficient to initiate and sustain a cultural change.

critical success factors

Indicators developed by a customer that indicate the defect-free character of a product or service.

customer

Anyone for whom an organization or an individual provides goods or services.

customer-supplier relationship

The relationship between customers and suppliers of goods or services attempting to align capabilities and requirements.

defect

a nonconforming attribute.

defective

A unit with a nonconforming attribute.

Deming Wheel

Another name for Dr. Shewhart's "Plan, Do, Check, Act" (PDCA) cycle. To achieve quality improvement, Dr. Deming said you must plan for it, implement it (do), analyze the results (check or study), and take action (act) for continuous improvement.

deployment flow chart

Flow chart that shows the people responsible for tasks as well as the flow of tasks in a process.

department task analysis

A method for analyzing an organization by determining its mission and how it interacts with customers and suppliers.

diagnosis

The process of studying symptoms, taking and analyzing data, conducting experiments to test theories, and establishing relationships between causes and effects.

diagnostic arm

Term used by Juran to refer to a person or persons brought together to support data gathering and problem analysis.

effect

An observable action or evidence of a problem.

effective

A process that delivers a defect-free product or service to the customer.

efficient

A process that operates effectively while consuming the minimum amount of resources (labor, time, etc.)

errors, inadvertent

Worker errors that are unintentional, unwitting and unpredictable.

errors, technique

Errors that arise because workers lack an essential technique, skill or the knowledge needed to avoid making the error.

errors, willful

Errors that workers know they are making.

external customer

The customer who is outside the company or organization.

facilitator

A person who functions as the process manager/consultant to a group, team or organization. In quality improvement, the facilitator focuses on process, while the team leader focuses on content.

failure, accidental

Failure arising from misuse while in service.

failure, infant mortality

Early service life failure due to misapplication, design weaknesses, manufacturing mistakes or shipping damage.

failure, wearout

Failure after acceptable service life.

fish-bone diagram

Another name for the cause-and-effect diagram. The finished product resembles a fish skeleton. Also known as an Ishikawa diagram.

fitness for use

The condition of goods and services that meet the needs of people who use them.

flow chart

A chart that symbolically shows the input from suppliers, the sequential work activities and the output to the customer.

force field analysis

A list identifying promoting and inhibiting factors (forces) that must be overcome before opportunity/problem lists can be built or effective solutions can be implemented.

4W's and 1H

Who, What, Where, When and How. A useful tool to help develop an objective and a concise statement of the problem.

gatekeepers

Individuals who help others enter into a discussion (gate openers) and those who cut off others or interrupt them (gate closers).

goal

A statement describing a desired future condition or change.

ground rules

A list of actions/behaviors agreed to by the team that fosters cooperative team interactions and effective team decisions.

histogram

A bar chart that illustrates the frequency distribution of a measurement or value.

imagineering

Visualizing what a process without waste can become as a goal for improvement activities.

impact changeability analysis

A tool for prioritizing a list of problems/opportunities by ranking them according to the degree of impact versus the ease of change.

implementors

Those individuals responsible for performing tasks within a process.

in control

A process operating with variation inside the control limits.

institutionalization

To become part of an institution or organizational culture.

internal customer

The customer who is inside the organization, i.e., fellow workers, other departments.

interrelationship diagram

A management planning tool used to show cause and effect relationships between a given issue or problem and the factors which affect it.

intervention

The role of a team facilitator when he/she interrupts a group to state his/her observations about the group's dynamics.

Ishikawa diagram

Another name for a cause-and-effect diagram or fishbone diagram, it is named after the Japanese engineer, Dr. Kaoru Ishikawa, who developed the diagram.

just in time (JIT)

A philosophy that calls for goods to be produced just-in-time to be sold, viewing inventory as something to be avoided.

just-in-time (JIT) inventory

The minimum inventory required to meet production schedules.

local steering committees

Provide the support system for process managers/technical advisors. (See **advisory teams**.)

management-controllable defect

A defect that does not meet all of the criteria for an operator-controllable defect. (See **operator-controllable defect**.)

matrix concept

A group of elements with rows and columns designed to cross-reference multiple measurements or sets of data.

measurement

The dimension, quantity or capacity determined by measuring.

meeting assessment

A process where the team collects information about the effectiveness of their meeting. (See **process check**.)

mission

The single overriding goal statement for an organization. It should encompass all organized activities that are significant in terms of resources used.

multivoting

A structured series of votes by a team that reduces a list containing a large number of items to a manageable few.

natural tolerance limits

A 3-standard-deviation (3 s) spread, both above and below the mean, in the distribution of individual occurrences of the process. The natural tolerance limits are not necessarily related to the specification limits but reveal the natural random variability of a process.

nominal group technique (NGT)

A technique for generating a large number of ideas in a short period of time.

normal distribution

A symmetrical, bell-shaped distribution for variable data in which the mean, median and mode are all the same. This distribution type is the foundation for all variable control charts.

number of defects

Total number of defective units found in a sample.

objective

A more specific statement of the desired future condition or change than a goal. It includes measurable end results to be accomplished within specified time limits.

operational definition

A clear, unambiguous, detailed description of what is to be measured or counted that must be understood and accepted by all those who will gather information.

operator-controllable defect

A defect that occurs where it is possible for the trained operator to meet quality standards using established specifications.

organizational culture

Employees habits, values, ways of thinking, informal modes of operation that make up the way an organization defines itself.

out of control

A process variation outside the control limits.

p-chart

Control chart used to evaluate performance based on the percent of product or service with nonconformances. (percent defective)

Pareto chart

A type of bar chart, prioritized in descending order, from left to right, used to identify the vital few opportunities for improvement.

plus/delta evaluation

A technique used for evaluating the results of a meeting or session to identify the positive portions and negative portions. This technique allows for those negative areas to be improved.

poisson distribution

A discrete probability distribution for nonconformity attribute data. Also used as the foundation for c and u charts.

prioritization

A ranking process of projects, ideas or solutions by individual judgment or group consensus.

problem-solving techniques

Techniques that facilitate problem solving, such as, brainstorming, cause and effect diagrams, and Pareto charts.

problem statement

A statement that describes specific and measurable terms what is wrong and the impact.

process

A group of usually sequential logically related tasks that use organizational resources to provide a product or service to internal or external customers.

process action team (PAT)

A group of knowledgeable people who are chartered by management to form a team to identify, analyze, and solve a system problem or seize an opportunity to improve a product or service. PATs can be formed at any level of an organization and may be cross-functional.

process check

An assessment of the meeting process or activity versus content.

process owner

A manager assigned responsibility for the quality improvement of a process and delegated the authority to implement the improvement.

process quality improvement

A comprehensive method of analysis of an organizations 's process that relates measurable and desirable results from the initial identification of the problem or opportunity to current state of the effort. The desired outcome is better products or services provided at lower costs that either meet or exceed the customer's expectations.

program

A planned, organized effort directed at accomplishing a specified objective.

project statement

Developed by the team that briefly identifies the process to be improves. (see problem statement.

quality

Providing customers with products or services that meet or exceed their needs and expectations.

quality audit

An independent evaluation of the various aspects of quality performance.

quality circle

A group of people from the same work group who focus attention on ideas for improving quality within their own area.

quality control

The process of measuring quality performance, comparing it with the standard, and acting on the difference.

quality coordination team (QPT)

Major coordinating body for planning and implementing continuous improvement activities.

quality cost

(See **cost of quality**)

quality functional deployment (QFD)

Developed by Genichi Taguchi. QFD is a process that forces cross-functional planning and communication in the development of requirements. The process may be used to develop new products or services. QFD may also be used as an improvement tool. Requires customer input.

quality improvement

A systematic method for improving processes to better meet customer needs and expectations.

quality planning

Launching new products, processes, etc., in which continuous quality improvement is built-in.

R-chart

A control chart of the range of variables as a function of time, lot number or similar chronological variable.

random cause

(See **common cause** or **change cause**.)

random sample

The number of units chosen from a lot by a method that gives each unit an equal chance of being selected.

recorder

The person who takes minutes for meetings.

remedy

(See **solution**.)

rework

To correct defects which a process has produced.

root cause

The basic reason creating an undesired condition or problem. In many cases, the root cause may consist of several smaller causes.

run chart

A graphic plot versus time, of a measurable characteristic of a process.

sample size

Number of units to be selected for the random samples.

sampling

Technique of obtaining information about a large group (population) from a smaller, representative group (sample).

scatter diagram

Chart in which one variable is plotted against another to determine if there is a correlation between the two variables.

scrap

The loss in labor and materials resulting from defects that cannot be economically repaired or used.

scribe

A person who writes inputs from a team on a pad or board.

solution

A change that can successfully eliminate or neutralize a cause of defects.

SPC

(See **statistical process control**.)

special cause

A cause of a variation in a process that is not a random or uncontrollable cause. (In contrast to a common cause.)

specification limits

Limits established for a process that are determined by engineering, development or the customer. Specification limits are applied to individual occurrences and are not related to natural tolerance limits.

sporadic problem

A sudden adverse change in status quo, requiring a solution that returns the condition to the original state.

stable process

A process which is in statistical control.

standard deviation

A mathematical term to express the variability in a data set or process. It is commonly represented by the lowercase Greek letter, "sigma" (σ). In a normal distribution, 68.26% of the data will be within 1 σ from the mean, 95.44% within 2 σ , and 99.73% within 3 σ . Mathematically, a standard deviation is equal to the square root of the average squared differences between individual data values and the data set average.

statistical process control (SPC)

The application of statistical methods to monitor variations in a process over time.

steering arm

Term used by Juran that refers to a person or persons from various departments who give direction and advice on an improvement program.

steering committee

The group of individuals that establishes the direction, principles and policies for the continuous improvement process.

STP analysis (Situation, Target, Potential solution)

A method to organize information (perceptions) about a problem into three categories: the way things are now (situation), what the group wants to accomplish (target), and information about ways to get from the current situation to the desired target or outcomes (potential solution).

subprocess

A group of tasks that together accomplish a significant portion of an overall process.

supplier

Anyone from whom the organization or individual receives goods or services.

surveys

A means of gathering data on the opinions, feelings, impressions or satisfaction of a group.

symptom

A condition where evidence of a problem is manifested.

systematic diagram

A management planning tool used to break down issues, statements or ideas until actionable items are generated.

systems audit

An evaluation of any activity that can affect final product quality.

task

Specific activity necessary in the function of an organization.

team leader

A person who leads a team through the problem-solving process.

team member

A person trained in identifying, analyzing and solving chronic system problems and identifying improvement opportunities.

3 P's (Purpose, Process and Payoff)

Key areas to discuss at the start of a meeting or presentation are the purpose of the meeting, the process that will be allowed, and the payoff to the group.

theory

An unproven assertion about the reason for the existence of defects and symptoms.

trend

A gradual change in a process or product away from a relatively constant average.

u-chart

Control chart for plotting data based on the number of nonconformances found in each sample of varying size (defects per unit).

variable data

Data resulting from quantitative measurements.

variation

A concept that states that no two different items will be completely identical.

waste

Anything we expend resources on that does not add value to the final product.

WIIFM

"What's in it for me?"

Appendix 4

TQM Courses

Course Descriptions

Note: All numbers quoted below assume an organizational size of 125 employees. Requirements for different-sized organizations will increase or decrease proportionately; e.g., an organization twice the size of this example will require about twice the number of facilitators, training course sections, etc..

Train the Trainer Course

The author has developed several courses. The first course is the Train the Trainer Course and requires 30 days of training. This course is to develop an internal facilitator cadre to support future TQM training for the public sector organization. The initial cadre of TQM trainers or facilitators, ten volunteers from throughout the organization, receives training from an outside consultant if an in-house capability is not available. The course is composed of facilitator skills, team building, customer identification, process identification and in-depth study of quality tools such as competitive benchmarking, statistical process control, quality auditing and meeting skills. Once the facilitators are trained, each takes on training responsibilities for the public sector organization. To keep this cadre current, the facilitators may be involved in other training opportunities and course development to fulfill the organization's additional TQM requirements.

For the purposes of this illustration, the ten in-house facilitators will each have an average of two courses to teach. The facilitators may decide to specialize

in a particular area and may have more than two courses to teach. Some may wish to specialize in team member training, while others specialize in customer or process identification. This specialization of facilitators has advantages and disadvantages. In theory, the advantage is that the facilitator with specialization will have more knowledge than a generalist facilitator. The theoretical disadvantage is that the specialized facilitator may be called upon to train more classes than originally planned. In either case, the skills of the organization-member facilitators are necessary for a cost effective TQM program to take place.

Team Member Course

The first course the in-house facilitators will conduct is the basic Team Member Course, which is mandatory for every employee. This course provides a basic knowledge of TQM principles and team development skills. The Team Member Course is five days in length, and covers awareness of TQM principles and application, and some of the basic TQM tools. In addition, team development skills are taught through application of principles and hands-on team problem-solving experience.

Process Identification Course

The Process Identification Course is a follow-on to the Team Member Course. The purpose of this course is to provide the principles and application skills in process identification through the use of flow charting, affinity diagrams, root cause analysis, histograms, Ishikawa (fishbone) diagrams, Pareto charting, and problem-solving techniques (for definitions, see Appendix 3). The students

then return to their respective departments to provide these additional skills to the TQM team. The Process Identification Course provides basic statistical process control tools and techniques. The course length is five days. A total of 30 select employees from various departments are provided this training.

Customer Identification Course

The Customer Identification Course is a follow-on course to the Team Member Course and may be provided as an additional course to the Process Identification Course, or as a separate curriculum item for customer-based public sector organization functions. The purpose of this course is to provide principles and application skills in customer identification, customer satisfaction, customer needs identification, problem solving and customer service. The course is five days in length.

Works Cited

1. Kline, James, J., "State Governments' Growing Gains from TQM," National Productivity Review, Spring 1993, 259-271.
2. Hunt, V. Daniel, Quality Management for Government, A Guide to Federal, State and Local implementation, Milwaukee, WI: ASQC Press, 1993, 12-13.
3. Swiss, James E., "Adapting Total Quality Management (TQM) to Government," Public Administration Review, July/August 1992, Vol. 52, No. 4, 356-360.
4. Perine, J., Quality Advisor, Federal Quality Institute, telephone interview, January 27, 1995.
5. _____.
6. Federal Quality Institute, Presidential Award for Quality, 1994 Criteria, Washington, D.C., June 1993.
7. Politi, John, Executive Director, State Quality Award Network, c/o Excellence in Missouri Foundation, telephone interview, July 12, 1994.
8. _____.
9. Kline, James, F., "State Government's Growing Gains from TQM," National Productivity Review, Spring 1993.
10. Rubin, Caren, Governor's Office, State of California, Quality Coordinator, telephone interview, July 11, 1994.
11. California. Executive Department State of California Executive Order, W-47-93, June 10, 1993.
12. Rubin, Caren, Governor's Office, State of California, Quality Coordinator, telephone interview, July 11, 1994.
13. Berman, Evan M., and West, Jonathan P., "Municipal Commitment to Total Quality Management: A Survey of Recent Progress," Public Administration Review, January/February 1995, Vol. 55, No. 1, 57-58.
14. Berman and West, 57-58.

15. Perez, Antonio, Ziapa, Jim, "Promoting a Total Quality Management Initiative in the Community," The Quality Observer, (April 1992), 12.
16. Balles, Joe, Fisher, Tim, Hamilton, Lisa, Maslako, Carrienne, McCollum, Paul, Stetson, Stephanie, City of Madison Police Department Overtime Project, undated.
17. Chan, Amy, "Managing a Government Like a Business: The Sunnyvale System," Government Financial Review, April, 1994, 7-11.
18. _____, 11.
19. Osborne, David, Gaebler, Ted, Reinventing The Government - How the Entrepreneurial Spirit is Transforming the Public Sector. New York, NY: Plume, 1993.
20. Hunt, V. Davis, *Quality Management for Government*, ASQC Press, Milwaukee, WI, 1993, 10-15.
21. Scholtes, Peter R., et al., The Team Handbook, Joiner Associates, Inc., Madison, Wisconsin, November, 1989, 2-5.
22. Mosgaller, Thomas, Human Resources Division, City Of Madison, WI., and Walluks, Marian C., "Applying Quality Cost Control Systems to Government," Undated.
23. Wooldridge, Blue, "Overcoming Obstacles to Public-Sector Improvements Efforts," National Productivity Review, Winter 1992/92, 62-67.
24. _____, 62-67.
25. Scherkenbach, William W., The Deming Route to Quality and Productivity -- Roadmaps and Roadblocks. Washington D.C.: Ceep Press, 1988, 1-21.
26. Beckhard, Richard, Harris, Rueben T., Organizational Transitions -- Managing Complex Change -- Second Edition. Reading, MA: Addison-Wesley Publishing Company, 1987, 29.
27. Zuckerman, Marilyn R., Hatala, Lewis J., Incredibly American -- Releasing the Heart of Quality. Milwaukee, WI: ASQC Press, 1993, 200.
28. Perry, Robert L., American Society of Quality Control, Director, Technical Activities, Telephone interview, May 16, 1994.

29. Carr, David K, Littman, Ian D., Excellence in Government -- Total Quality Management in the 1990s. Arlington, VA: Coopers-Lybrand, 1990.
30. _____, 208.
31. _____, 209
32. _____, 205-246.
33. City of Austin Issue Paper, "Quality/Efficiency of Customer Service", City Of Austin Texas, March 1993, 21.

Bibliography

Balles, Joe, Fisher, Tim, Hamilton, Lisa, Maslako, Carrienne, McCollum, Paul, Stetson, Stephanie, City of Madison Police Department Overtime Project, undated.

Beckhard, Richard, Harris, Rueben T., Organizational Transitions -- Managing Complex Change -- Second Edition. Reading, MA: Addison-Wesley Publishing Company, 1987.

Berman, Evan M., and West, Jonathan P., "Municipal Commitment to Total Quality Management: A Survey of Recent Progress," *Public Administration Review*, January/February 1995, Vol. 55, No. 1, 57-66.

California. Executive Department State of California Executive Order, W-47-93, June 10, 1993.

Carr, David K, Littman, Ian D., Excellence in Government -- Total Quality Management in the 1990s. Arlington, VA: Coopers-Lybrand, 1990.

Chan, Amy, "Managing a Government Like a Business: The Sunnyvale System, Government Financial Review, April, 1994, 7-11.

City of Austin Issue Paper, "Quality/Efficiency of Customer Service", City Of Austin Texas, March 1993, 21.

Crosby, Philip B., Quality Without Tears -- The Art of Hassle-Free Management. New York: New American Library, 1984.

Federal Quality Institute, Presidential Award for Quality, 1994 Criteria, Washington, D.C., June 1993.

Fossum, Lynn, Understanding Organizational Change -- Converting Theory to Practice. Los Altos, CA: Crisp Publications, 1989.

Gehani, R. Ray, "The Tortoise vs. The Hare," Quality Progress, Volume 27, Number 5, (May 1994). 93-97.

- Goman, Carol Kinsey, Adapting to Change -- Making It Work For You.
Los Altos, CA: Crisp Publications, 1992.
- Hammer, Michael, Champy, James, Reengineering the Corporation -- A Manifesto for Business Revolution. New York, NY: Harper Business, 1993.
- Hauser, Charles R, Clausing, Don, "The House of Quality," Harvard Business Review Volume 66, Number 3 (May-June 1988). 63-73.
- Hubbard, Dean L., "Can Higher Education Learn From Factories," Quality Progress, Volume 27, Number 5, (May 1994). 93-97.
- Hunt, V. Daniel, Quality Management for Government, A Guide to Federal, State and Local implementation, Milwaukee, WI: ASQC Press, 1993, 12-13.
- Kline, James, F., "State Government's Growing Gains from TQM", National Productivity Review, Spring 1993, 259-271.
- Milakovich, Michael E., "Total Quality Management in the Public Sector", National Productivity Review, Spring 1991, 203-205.
- Mosgaller, Thomas, Human Resources Division, City Of Madison, WI., "Applying Quality Cost Control Systems to Government," Undated.
- Osborne, David, Gaebler, Ted, Reinventing The Government - How the Entrepreneurial Spirit is Transforming the Public Sector. New York, NY: Plume, 1993.
- Perry, Robert L., American Society of Quality Control, Director, Technical Activities, Telephone interview, May 16, 1994.
- Perez, Antonio, Ziapa, Jim, "Promoting a Total Quality Management Initiative in the Community," The Quality Observer, (April 1992), 11-14.
- Perine, J., Federal Quality Institute, telephone interview, August 2, 1994.
- Politi, John, State Quality Award Network, c/o Excellence in Missouri Foundation, telephone interview, July 12, 1994.
- Prowse, Mike "Flash", Total Quality Management -- Good Enough for Government Work. Maxwell Air Force Base, AL. Air University Press, 1990.
- Rubin, Caren, Governor's Office, State of California, Quality Coordinator, telephone interview, July 11, 1994.

Scherkenbach, William W., The Deming Route to Quality and Productivity -- Roadmaps and Roadblocks. Washington D.C., Ceep Press, 1988.

Scholtes, Peter R., et al., The Team Handbook, Joiner Associates, Inc., Madison, Wisconsin, November, 1989.

Swiss, James E., "Adapting Total Quality Management (TQM) to Government", Public Administration Review, July/August 1992, Vol. 52, No. 4, 356-360.

Wooldridge, Blue, "Overcoming Obstacles to Public-Sector Improvements Efforts, National Productivity Review, Winter 1992/93, 62-67.

Zuckerman, Marilyn R., Hatala, Lewis J., Incredibly American -- Releasing the Heart of Quality. Milwaukee, WI: ASQC Press, 1993.

Suggested Readings

Total Quality/ Continuous Improvement

- Amsden, Robert T., Butler and Amsden, SPC Simplified, White Plains, NY: Unipub, 1986.
- Beckhard, Richard, Harris, Rueben T., Organizational Transitions -- Managing Complex Change -- Second Edition. Reading, MA: Addison-Wesley Publishing Company, New York, NY: 1987
- Brassard, Michael, The Memory Jogger Plus, Methuen, MA: GOAL/QPC, 1989.
- Camp, Robert C., Benchmarking, White Plains, NY: ASQC Press, 1989.
- Carlisle, John A. and Parker, Robert C., Beyond Negotiations, New York, NY: John Wiley & Sons, 1988.
- Carr, David K, Littman, Ian D., Excellence in Government -- Total Quality Management in the 1990s. Arlington, VA: Coopers-Lybrand, 1990
- Crosby, Philip B., The Eternally Successful Organization, New York, NY: New American Library, 1984.
- _____, Quality Is Free, New York, NY: Mentor, 1980.
- _____, Quality Without Tears, New York, NY: New American Library, 1984.
- Deming, W. Edwards, Quality, Productivity, and Competitive Position, Cambridge, MA: MIT, Center For Advanced Engineering Study, 1982.
- Feigenbaum, Armand D., Total Quality Control, Third Edition, New York, NY: Mc Graw-Hill, 1983.
- Gehani, R. Ray, "The Tortoise vs. The Hare," Quality Progress, Volume 27, Number 5, (May 1994). P. 93-97
- Gitlow, H.S. and Gitlow, S.J., Demming Guide to Achieving Quality and Competitive Position, Englewood Cliffs, NJ: Prentice-Hall, 1986.
- Goldratt, Eliyahu M, The Haystack Syndrome, Croton-on-Hudson, NY: North River Press, 1990.

- _____, What is This Thing Called Theory of Constraints and How Should It Be Implemented?, Croton-on-Hudson, NY: North River Press, 1990.
- Goldratt, Eliyahu M. and Cox, Jeff, The Goal: A Process of Ongoing Improvement, Croton-on-Hudson, NY: North River Press, 1986.
- Goldratt, Eliyahu M. and Fox, Robert E., The Race, Croton-on-Hudson, NY: North River Press, 1986.
- Grant, Eugene L. and Leavenworth, Richard S., Statistical Quality Control, 5th ed. New York, NY: Mc Graw-Hill, 1980.
- Grayson C. Jackson, Two Minute Warning, New York, NY: The Free Press, Division of McMillan, 1989.
- Gunn, Thomas G., Manufacturing for Competitive Edge, New York, NY: Harper & Row Publishing Company New York, NY: 1987.
- Hammer, Michael, Champy, James, Reengineering the Corporation -- A Manifesto for Business Revolution, New York, NY: Harper Business, 1993.
- Hauser, Charles R, Clausing, Don, "The House of Quality," Harvard Business Review Volume 66, Number 3 (May-June 1988). P. 63-73.
- Hunt, V. Daniel, Quality Management fro Government, Milwaukee, WI: ASQC Press, 1993.
- Ishikawa, Kaoru, Guide to Quality Control, Englewood Cliffs, NJ: Prentice-Hall, 1985.
- _____, What is Total Quality Control? The Japanese Way, Translated by David J. Lu, Englewood Cliffs, NJ: Prentice-Hall, 1985.
- Juran, Joseph M., Juran on Planning for Quality, New York, NY: The Free Press, Division of McMillan, 1989.
- King, Bob., Better designs in Half the Time - Implementing QFD Quality Functional Deployment in America: Methuen, MA: GOAL/QPC, 1987.
- Lawler, Edward E., III, High Involvement Management, San Francisco, CA: Jossey, Bass Inc., 1986.
- Lefever, Henry L., (ed), Government Quality and Productivity- Success Stories, Milwaukee, WI., ASQC Press, 1992.
- Mann, Nancy R., The Key to Excellence, Santa Monica: CA: Prestwick Books, 1987.
- Osborne, David, Gaebler, Ted, Reinventing The Government - How the Entrepreneurial Spirit is Transforming the Public Sector. New York, NY: Plume, 1993.

Perez, Antonio, Ziapa, Jim, "Promoting a Total Quality Management Initiative in the Community," The Quality Observer, (April 1992), 11-14.

Scherkenbach, William W., The Deming Route to Quality and Productivity -- Roadmaps and Roadblocks. Washington D.C.: Ceep Press, 1988.

Scholtes, Peter R., The Team Handbook- How To Improve Quality Teams, Madison, WI: Joiner Associates, Inc., 1988.

Schwartz, Robert A., Recovering Prosperity Through Quality, Milwaukee, WI., ASQC Press, 1993

Walton, Mary, The Deming Management Methods, New York, NY: The Putnam Publishing Group, 1986.

Zuckerman, Marilyn R., Hatala, Lewis J., Incredibly American -- Releasing the Heart of Quality, Milwaukee, WI., ASQC Press, 1993

Change

Barker, Joel Arthur, Future Edge, Discovering the New Paradigms of Success, New York, NY: William Morrow and Company: Inc., 1992

Belasco, James A., Teaching the Elephant to Dance: Empowering Change in Your Organization, New York, NY: The Free Press, Division of McMillan, 1987.

Drucker, Peter F., The New Reality, New York, NY: Harper & Row Publishing Company: 1989.

Fossum, Lynn, Understanding Organizational Change -- Converting Theory to Practice. Los Altos, CA: Crisp Publications, 1989

Goman, Carol Kinsey, Adapting to Change -- Making It Work For You. Los Altos, CA: Crisp Publications, 1992.

Hickman, Craig, R. and Silva, Michael A., Creating Excellence, New York, NY: Harper & Row Publishing Company, New York, NY: 1986.

Kanter, Rosebeth Moss, The Change Masters, New York, NY: Simon and Schuster, 1986

Naisbitt, John, Megatrends: Ten New Directions Transforming Our Lives, New York, NY: Warner Books, 1982.

Peters, Tom and Waterman, Robert, In Search of Excellence, New York, NY: Warner Books, 1982.

Peters, Tom and Austin, Nancy, A Passion For Excellence, New York, NY: Random House, 1985.

Peters, Tom, Thriving on Chaos: Handbook for a Management Revolution, New York, NY: Alfred A. Knoff, 1987.

Customer Satisfaction

Albrecht, Karl, At America's Service, Homewood, IL: Dow Jones-Irwin, 1988.

Albrecht, Karl and Zemke, Ron, Service America!, Homewood, IL: Dow Jones-Irwin, 1985.

Carr, Clay, Front-Line Customer Service: 15 Keys to Customer Satisfaction, New York, NY: John Wiley & Sons, 1990.

Cron, Rodney L., Assuring Customer Satisfaction: 15 Keys to Customer Satisfaction, New York, NY: Van Nostrand Reinhold Co., 1974.

Cowell, Donald, The Marketing of Services, London, UK: William Heinemann, 1984.

Fritz, Robert, The Path of Least Resistance, Salem, MA: Stillpoint Publishing, 1984.

Heskett, James L., Managing in the Service Economy, Boston, MA: Harvard Business School Press, 1986.

Jacobson, Gary and Hillkirk, John, Xerox: American Samurai, New York, NY: McMillan, 1986.

Katz, Bernard, How to Turn Customer Service into Customer Sales, Lincolnwood, IL, NTC Business Books, 1988.

Lash, Linda M., The Complete Guide to Customer Service, New York, NY: John Wiley & Sons, 1989.

LeBoeuf, Michael, How to Win Customers and Keep Them for Life, New York, NY: Putnam's, 1987

Lele, Milind M., and Sheth, Jagdish N., The Customer is Key: Gaining an Unbeatable Advantage Through Customer Satisfaction, New York, NY: John Wiley & Sons, 1987.

Lovelock, Christopher H., Services Marketing, Englewood Cliffs, NJ: Prentice Hall, 1984.

Rosander, A. C., Applications of Quality Control in the Service Industries, New York, NY: Marcel Dekker, Inc., 1985.

Sasser, W. Earl, Olsen, Paul and Wycoff, D. Daryl, Management of Service Operations, New York, NY: Allyn & Bacon, 1978.

_____, Steps to Improving Service Quality and Customer Satisfaction, Washington, DC, American Bankers Association, 1990.

Zemke, Ron, The Service Edge, New York, NY: NAL Books, 1989.

Leadership

Bennis, Warren, On Becoming A Leader, New York, NY: Addison-Wesley, 1989.

Block, Peter, Empowered Manager: Positive Political Skill at Work, San Francisco, CA: Jossey, Bass Inc., 1986.

Byham, William C. with Jeff Cox, Zapp! The Lightning of Empowerment, New York NY: Harmony Books, 1988.

De Pree, Max, Leadership is An Art, East Lansing, MI, Michigan University Press, 1987.

_____, Leadership Jazz, New York, NY: Currency Book, 1992.

Juran, Joseph M., Juran on Planning for Quality, New York, NY: The Free Press, Division of McMillan, 1989.

Kanter, Rosebeth Moss, When Giants Learn to Dance, New York NY: Simon and Schuster, 1989.

Lundin, William, and Lundin, Kathleen, The Healing Manager: How to Build Quality Relationships & Productive Culture At Work, San Francisco, CA: Berrett-Koehler Publishers, Inc., 1993.

Lundy, James, Lead, Follow or Get The Hell out of the Way: Leadership Strategies for the Thoroughly Modern Manager, New York, NY: Avant Books, 1986.

Manus, Burt, Visionary Leadership: Creating a Compelling Sense of Direction for Your Organization, San Francisco, CA: Jossey, Bass Inc., 1992.

Miller, James with Zemke, Ron, B., The Corporate Coach, New York, NY: St. Martin's Press, 1993

Roberts, Wess, Leadership Secrets of Attila the Hun, New York, NY: Doubleday, 1989.

_____, Victory Secrets of Attila the Hun, New York, NY: Doubleday, 1993.

Scherkenbach, William W., The Deming Route to Quality and Productivity -- Roadmaps and Roadblocks. Washington D.C., Ceep Press, 1988.

Team Building, Problem-Solving, and Communications

Covey, Steven, R., Seven Habits of Highly Effective People, New York NY: Simon and Schuster, 1988.

_____, Quality Is Free, New York, NY: Mentor, 1980.

_____, Quality Without Tears, New York, NY: New American Library, 1984.

Doyle, Michael and Straus, David, How To Make Meetings Work, New York, NY: Jove Books, 1992.

Frank, Milo O., How To Get Your Point Across in 30 Seconds or Less, New York, NY Pocket Books, Division of Simon and Schuster, 1988.

Hamilton, Cheryl and Perker, Cordell, Communicating For Results, New York, NY: Wadsworth, Inc., 1987.

Keifer, George David, Strategy of Meetings, New York, NY: Simon and Schuster, 1988.

Murphy, Kevin J., Effective Listening: Your Key to Success, New York, NY: Bantam Books, 1989.

Parker, Glenn M., Team Players and Teamwork: The New Competitive Business Strategy: San Francisco, CA: Jossey-Bass Publishers, 1990.

Scholtes, Peter R., The Team Handbook- How To Improve Quality Teams, Madison, WI: Joiner Associates, Inc. 1988.

Swets, Paul W., The Art of Talking So That People Will Listen, New York, NY: Prentice Hall Press, 1983.